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ON

THE NECESSITY OF ORTHOPAEDIC TRAINING:

ITS RELATION TO THE PREVENTION AND CURE OF DEFORMITIES.

DELIVERED AT THE UNIVERSITY OF EDINBURGH ON JANUARY 14TH, 1921.

BY

SIR ROBERT JONES, K.B.E., C.B., M.CH.,
F.R.C.S.ENG., IREL., AND EDIN.,
LECTURER ON ORTHOPAEDIC SURGERY, LIVERPOOL UNIVERSITY; DIRECTOR OF ORTHOPAEDICS, ST. THOMAS'S HOSPITAL, LONDON.

ONE of the greatest of all honours that a surgeon can receive is the Cameron prize from the University of Edinburgh. It is needless to say how deeply grateful I am to have been selected by your university, and when I think of the distinguished men from various countries who have been recipients in years gone by, I am only too painfully conscious of my unworthiness. Were it not for the tragic incidence of war and the opportunity given me to organize schemes of physical reconstruction the prize must needs have fallen into better hands. It is because it bears relation in this instance to war work that I venture to give you a very simple address relating to the cripple problem generally, both infant and adult, pointing out some of the lessons which the war has taught us—more especially in relation to segregation and the prevention of deformity, emphasizing the necessity of paying more attention to the education of students in orthopaedic principles if they are to be efficiently equipped in after-life. The prevention of surgical tragedies is largely dependent upon the general practitioner, and his usefulness is largely dependent upon his academic training. He frequently sees the beginning of diseases when he enters practice—a phase of work which he has hitherto only studied theoretically—for his hospital experiences have been largely concerned with more advanced stages. He fills an extremely responsible position in most departments of his work, and this is especially true in regard to the early advent of deformities. These deformities are mainly associated with tuberculosis, rickets, and infantile paralysis, but then there are others of congenital origin.

It is evident that many of the deformities due to these conditions may be altogether prevented, and that practically all of them may be so corrected as to enable the patient to become ultimately a valuable industrial asset. An uncorrected deformity may often be the result of parental obstinacy, but not infrequently it is due to a want of knowledge on the part of the practitioner. We have only to visit any out-patient department to be satisfied as to the prevalence of the uncured cripple—often the *untreated* cripple. They are seen in every corner of the earth. If we inquire into the causes of these failures, we find that many of them were not seen in the early stages; many were refused hospital accommodation; others admitted into wards had to be evacuated early because of the pressure on beds; others suffered because there had been lack of continuity of treatment; most of them had not been supervised by surgeons sufficiently interested in that type of work. It is evident, if we are to prevent deformity, we must teach the fundamental principles in such a way that the teaching will bear fruit in remote places. We must reach the *practitioner* because we have to trust to him for an early diagnosis, and he should at least know the possibilities of modern treatment. The most effective way to accomplish this is through the mind of the student.

To illustrate the value of early corrective treatment we will consider for a few moments a simple type from each of the four groups from which deformities are derived. From the congenital group we will select an ordinary case of congenital equino-varus.

Congenital Deformities.

It is quite common in England to see these cases left for many months without any treatment of a systematic kind. Indeed, some surgeons of repute speak of postponing treatment until the child can walk. They do not realize the irregular growth that takes place in the tarsus blocking and fixing the foot with increasing effect. It is quite true that a club-foot requires the final act of walking to complete its recovery, but the deformity itself can be completely eradicated in days or weeks, and by methods which can be easily taught to the practitioner in charge if the attempt is made *sufficiently early*. Every one should be taught that the earlier treatment is started, the better the functional result. How often we hear of "recurrences"; that they take place is constantly affirmed by writers as if they were enunciating a principle. Here, again, it should be insisted that a cured club-foot (an over-corrected club-foot is not necessarily a cured one) cannot recur—an over-corrected one frequently does. It is futile to correct obstructive and skeletal elements if the other factors are ignored. One of the causes of these so-called "recurrences" is weakened overstretched dorsiflexors and peronei. Until the child can over-correct its own deformity by a voluntary act, the foot is subject to the same influences that bring about foot-drop in infantile paralysis. If you examine many so-called "cured" club-feet, you will note the weakened condition of these muscles; if simple methods of treatment were applied for rectifying the deformity and restoring the function of the foot, there would be no need for cumbrous antiquated instruments reaching to the pelvis to keep a foot from turning in. Such implements suggest a serious misunderstanding of fundamental principles.

Rickety Deformities.

Take another group of deformities—those associated with rickets. The etiology of this condition is sufficiently known to merit some organized method of control. Recent investigations with regard to vitamines have served to confirm us in our view that it is largely a dietetic disease intensified by insanitary conditions. It is the practitioner who, here again, appears first upon the scene. He knows that mother's milk is better than the pernicious substitutes, and he knows the benefit of fresh air and the evils of overcrowding. If he preached this doctrine with enthusiasm, considerable headway would result in the prevention of rickets. When the disease appears he should know of the danger to soft bones of crawling and walking; he should realize the direct harm done to the child by the way the mother carries it; and, later, when deformity has become evident, how dangerous it is to tell the parents that "the child will grow out of it." When the bones are soft, the recumbent position, a frame and a bandage, without any drastic surgical methods, will correct the worst deformities in the young, and the bones will harden in their correct alignment provided feeding is suitable and the child is kept in the open air and not allowed to walk until the bones are firm.

Then we surgeons are often to blame when the rachitic come to us with their deformities. It is the osteotome, the saw, or osteoclast which we rely upon to straighten the limb, but how rarely do we take adequate protection against recurrence! Our out-patient departments abound with cases in which deformity has been corrected, and has recurred worse than ever, because of deficient after-care. This very properly brings our surgical methods into disrepute. For here again we have not merely to correct the deformity, but to cure the disease—not merely to straighten the soft bones, but to harden them. Deformities of the extremities should never be allowed to occur in rickets, and to fail to rectify them if they appear is a reproach either to the parents, to the surgeons, or to both. If the deformity, having been corrected, returns, it is a serious reflection upon someone.

Deformities due to Tuberculosis.

Again, let us refer to tuberculosis in children. We should be able, given reasonable State facilities, to eradicate this dreadful evil from our midst. If it does appear we should be able to prevent any deformity due to faulty alignment. Most practical and suggestive work on the etiology of tubercle in children, as you know, emanated from Edinburgh under the direction of Sir Harold Stiles, assisted by Mr. Fraser and Mr. Mitchell, who, with scientific methods and infinite labour, traced the infections from cows to children, and were able to correlate their clinical and pathological findings. No less than 60 per cent. of bone and joint disease were due to bovine infection. They found that 37 per cent. were due to the human bacillus, and in 62 per cent. of the human type a history of pulmonary

trouble existed in a parent whereby direct infection could take place. These experiments should be repeated on a large scale all over the country. Even now, at a minimum computation, one specimen of mixed milk in every ten contains living tubercle bacilli. Stenhouse Williams, an acknowledged authority, states that about 30 per cent. of the cattle in this country are affected with tubercle, and that of the total cattle only 2 per cent. will be in such an advanced stage of disease as to be affected by the Tuberculosis Order. "What," he pertinently asks, "is to become of the remaining 28 per cent.?"

What good can result by promulgating theories as to the immunizing of the race by feeding our children on living tubercle bacilli when we see the havoc and tragedy around us? It discourages any preventive effort which the State may make, and supplies the careless dairyman with an argument of immeasurable evil. Is it too much to insist that our milk should be so purified that no living tubercle bacillus should be allowed to enter the mouth of a child? The practitioner here again has a great gospel to preach. If in spite of all a joint becomes involved it will come under his observation first. Again, I have only to refer to the deformities of tuberculous joints, and to insist that a knowledge of the beginnings, and of the sequence of events, would relieve our hospital beds of much pressure and the child of much suffering.

Deformities after Acute Anterior Poliomyelitis.

We do not know enough of infantile paralysis, in spite of the investigations that have recently been made by Flexner, Clark, Osgood, and Lovett, but we have sufficient knowledge to treat it as a dangerously infective disease which should involve placing the family in quarantine, and guarding the healthy children as strictly as they would be guarded against any other acutely infectious disease. The early treatment of infantile paralysis, again, is in the hands of the family doctor. The surgeon very rarely sees the case in the acute stage, and then only when pain occurs or paralysis is discovered. Treatment should be undertaken at once, and should consist of complete rest of the nerves and muscles. I should make it a rule in every case, whether pain is present or not, to keep head and spine at rest just as if we were treating an inflamed area. During both the acute and early convalescent stage the treatment should be protective, and this term should include the prevention of postural errors such as tend to give an initial bias towards deformity. The rapid recovery of muscular groups in extensive paralysis suggests a pressure upon nerve cells which, under given conditions, is rapidly dispersed. Complete destruction of nerve cells is comparatively rare—hence the very late recoveries which often follow treatment. The family doctor may materially shorten and limit the disease, and prevent infection by early rest and isolation, while the risk of the advent of deformity and functional disability can be materially lessened by recognizing as a principle that the paralysed muscle should not be allowed to stretch.

Orthopaedics in the War.

Nearly all the crippling deformities of children and adults are included in the branch of surgery which, for the want of a better name, we call "orthopaedic," and the upper and lower extremities present its main field of activity. This type of surgery formed a large proportion of the injuries of war, and it will readily be admitted that many early failures would have been avoided if British university and hospital training all over the country had embraced in the curriculum the practical teaching of orthopaedic surgery.

Frequent visits round our Command Dépôts revealed the shortcomings of the routine teaching, for one found segregated every type of deformity; most of it need never have occurred had sufficient time been spent in educating the student in the principles which govern the development of deformity. These revelations implicated not merely auxiliary hospitals, but the best known hospitals in the land. The cases we met with were malunited and ununited fractures, stiff and ankylosed joints, injuries of peripheral nerves, partial destruction of the spinal cord, faulty fixation of joints, deformities due to the contraction of scars, and malposition due to functional causes. We found ankylosed joints being massaged, the limb often fixed in the position of least functional usefulness. We found old arthritic joints being moved with calamitous results, simple adhesions treated as if inflammatory activity were present, the after-effects of peripheral nerve injuries treated without regard to the stretching of paralysed muscles; frequently cases in which nerve had been sutured arrived at the camp without any protection for the disabled muscle, and many cases had been allowed to contract so as to deprive joints and fingers of all usefulness. These tragedies did not necessarily originate in Command Dépôts, but often arrived there when the mischief had been done. They were not all necessarily due to ignorance or neglect; often they were the result of scarcity of beds, early evacuation, want of continuity of treatment, but the conclusion was also forced upon one that they displayed a lack of orthopaedic training on the part of surgeons and practitioners generally. The Command Dépôts in point of fact presented large groups of cases where Nature unassisted had been allowed to do its curative work without regard to restoration of function. The orthopaedic mind is taught to think in terms of function. It has mainly to deal with a pre-operative and a post-operative stage. The operative stage, although often essential, has only a proportionate value. Orthopaedic operations are usually measures preliminary to the re-education of muscle and restoration of function. They include the maintenance of joints and limbs in proper position in order that injured tissue may recover functional efficiency. The period of disability is materially shortened if the limb is protected against deformity while the wound is being allowed to heal. We may be certain that gross malunion of a fracture is not only deplorable but preventable. Most of the malunited fractures of the war were due to the inefficient fixation of the limb in the presence of sepsis, or to inexperience of the surgeon in regard to completion of consolidation. Later in the war, the soft tissues were allowed to heal with the bone in good alignment, and this position was maintained while body pressure was permitted. Attention to these two points resulted in a marked decrease of deformity, and, in consequence, an improvement of function. Even yet surgeons do not fully realize that a fracture of the femur which has recovered sufficiently to be unyielding to manipulation may yield to the incidence of body-weight. Pain on pressure over the site of fracture suggests an unsound or delayed union. Pain on pressure, and an excessive callus display, requires special protection in order that yielding may be avoided.

The deforming contraction of scars which we found in Command Dépôts could be avoided by recognizing certain principles. The wound should be allowed to heal with the limb placed in a position opposed to the contractile force, and the surgeon should remember that the bigger the mass of granulation, the more massive and contractile the organized fibrous tissue proves. Wounds in the axilla should be allowed to heal with the arm abducted; in the flexure of the elbow, with the forearm extended; of the wrist and palm, with the joint dorsiflexed, and so on with the other joints. *Fully matured fibrous* tissue has no more tendency to contract than any other tissue; as a scar takes a long time to be composed of fully matured tissue, the precautions taken against contractures must be prolonged.

It was in consequence of this ever-increasing stream of deformity that the Orthopaedic Centres were started, where the principle of segregating special groups of cases came to be recognized as clamant. From all parts of the country cases poured in. We started with 250 beds in Liverpool, and rapidly extended into the principal towns of Great Britain and Ireland until our beds eventually numbered over 20,000. The staffs were made up of general surgeons, orthopaedic surgeons, neurologists, and chiefs of special departments. We were permitted to keep our cases longer than in the general military hospitals, and were given every modern facility in the way of equipment. For psychological and reconstructive purposes we introduced the curative workshops. These Orthopaedic Centres completely transformed the mental attitude of the derelict, and inspired every surgeon who worked there. The spirit of friendly rivalry and enthusiasm which infected all became part of the atmosphere. Consultations among the members of the staff were of daily occurrence. Any advance made by one surgeon was at once the common property of all. There were no watertight compartments anywhere. The successes and the failures were equally advertised without

mental reservation, and the secretive mind had no place amongst them. Needless to say, that spirit of comradeship and interest in each others' achievements and failures could not fail to make for progress. Each surgeon followed his case from the beginning to the end. It did not pass from one department to the other without an agreement as to the continuity of treatment. The surgeon discussed the line of treatment to be adopted with the chiefs of the special departments, and at stated intervals all the cases were collected, so that progress might be recorded and alterations discussed. As time passed, it was found that certain surgeons had special aptitude for dealing with certain types of cases, and they were encouraged to devote themselves to these and refrain from work which others could do better. This principle of employing a special talent and discarding lesser ones will doubtless in time to come obtain in our general hospitals, to the great advantage both of the surgeon and of the patient. The growth of surgery has been so rapid of recent years that only a very few surgeons have been sufficiently gifted to deal efficiently with all types of cases, and it is common to hear from old students that certain chiefs were only interested in the surgery of the nervous system, or of the abdomen, or of the extremities, and yet they had to plough through the uncongenial work as best they could. Their brilliance in one department was tarnished by their lower efficiency in another. A spirit of comradeship whereby the staff would interest each other in the work in which they each excelled would result in a sound, practical education, and in impressing upon them their values and their limitations.

The advantage of segregating certain cases under surgeons specially interested in them has been proved by the experiences of war. It was very marked in the case of fractures. In the early days of incomplete organization nearly all the fractures of the femur admitted into special surgical centres exhibited marked malunion and deformity. Some were treated abroad, but most of them were treated in general hospitals in this country. Rapid evacuation at home and abroad due to military exigencies, and, often, defective handling by surgeons with no mechanical training, accounted for an appalling number of deformities, many of which took years to rectify. Later it was recognized abroad that these cases should be segregated, and it was most interesting to note the improvement that occurred. By this time the principle of the Thomas knee, bed, and calliper splints, with modifications introduced to facilitate the treatment of large wounds, was recognized. The cases arriving from the fracture base hospital at Boulogne were invariably so well placed, both as regards fixation and alignment, that they rarely required more than casual attention; when some relapsed into deformity it was due to ill-advised changes adopted by surgeons at home, who frequently removed the splints too soon, and allowed walking before consolidation had occurred. Cases which had given skilled surgeons abroad the greatest anxiety and endless care, on arriving home failed to secure that continuity of good treatment essential to success. I received many a heart-breaking letter from abroad complaining of all this. Several special fracture hospitals were opened in France later, and, as a result, an end came to deformity. After the bombing of Etaples all fractures were sent home, and the expert staffs were housed in our special orthopaedic centres. At one time at Edmonton we had 300 cases of fracture of the femur with an average shortening of less than half an inch. This is an extraordinary achievement when we consider the severity of the injuries. Results equally good were obtained at Alder Hey by the use of the Thomas splint employed in its original simplicity. The lesson we gather from this is that by simple methods taught in a few hours the practitioner in remote places can be safely trusted to start a fractured femur on a safe career.

A general training in the treatment of fractures would have saved thousands of lives during the war. If our universities and teaching hospitals would fix upon the simplest types of appliances, and thoroughly ground the students in the principles which govern the application, humanity may yet be spared numberless deformities. The appliances should be of the simplest kind to be of widespread use. In every large hospital there should be a fracture ward, and the chief should be both interested and competent. The treatment of fractures in this country is at present a sadly neglected art, and every effort should be made to place it on a more scientific plane. A walk round our hospital wards indicates clearly the apathy displayed by many surgeons. Fractures are looked upon as a nuisance and generally relegated to a junior house-surgeon, who, in his turn, exhibits but little interest or ingenuity. The surgeon's attention is devoted to the vagaries of the abdominal contents, and he has no desire to waste his time or beds on mere fractures. His attitude of mind finds its reflex in that of the students. The crippling and deformity is looked upon as a necessary sequence of injury rather than as a reproach.

When our military Orthopaedic Centres were started their extension was hindered because we had at our disposal only a few men who had received special training. At that period every young man was expected at the seat of war, and only a very few could be spared for home work. The American Government, realizing our plight, very generously sent us twenty-five well trained young orthopaedic surgeons, who were to help us, free from expense, for the duration of the war. Without that help we should have been very seriously handicapped. In return for this we undertook to train large numbers of their young surgeons at our centres to enable them to be of greater service abroad. This training specially fitted them to deal with injuries of the extremities, and they received an intensive education in the use of a few well considered splints which were standardized by the American Government. These splints were plentifully supplied to the whole of the medical service, together with the code of instructions. By this means in a very short time they were enabled to acquire knowledge which we had learnt only from bitter experience. They distributed splints at once to the regimental aid posts; each knew the working of the splint, from front to base, and so continuity of treatment was secured along the line. What a saving of life this represented! Sir Henry Gray, in 1916, collected statistics over one of the army areas, and found that 80 per cent. of compound fracture cases died, mostly before arriving at or after they arrived at the casualty clearing stations; and when, in 1918, immediate fixation in the Thomas splint was secured at the first possible moment, Sir Anthony Bowlby tells us that the mortality was reduced to 30 per cent. This is an interesting reflection in regard to team work, the treatment of shock, and the standardization of simple methods. It would be a calamity if the knowledge forced upon us in such strenuous times and through so much sacrifice were lost in time of peace.

Need for Orthopaedic Training.

We hear frequent criticism from both continents of the lack of orthopaedic training in this country. While lectureships and clinics abound abroad, it is only quite lately—and this largely owing to the war—that there has been a very strong feeling expressed in this country as to our need of orthopaedic instruction. I think this is due to the limited definition which has so long been associated with the term "orthopaedics." So long as the specialty was confined to flat-feet, knock-knees, club-feet, and certain other deformities, it seemed useless to trouble about it. So long as expensive, cumbersome, and consequently useless appliances were in evidence, one is not astonished that the surgeon not only neglected Orthopaedic Surgery but looked upon it with contempt! Fortunately, however, that day is past. It is now recognized that an essential preliminary to orthopaedic efficiency involves a thorough practical training in general surgery. With a gradual expansion of its definition a higher degree of skill is demanded by its votaries, and no one will now venture to practise it with any false notion that the road is an easy one. In addition to operative skill, it demands special qualities of mind; mechanical aptitude and untiring perseverance and patience are not the least important of these.

Since the war several hospitals have decided to embrace in their curriculum the teaching of Orthopaedics, and I have often been asked to help in regard to organization and requirements. An Orthopaedic Department is too often a mere out-patient clinic, sometimes under the control of a physio-therapeutist with no supervision by a specially trained surgeon. At times a junior man is in control, with no interest but to make it a stepping-stone to another post, which he accepts with alacrity at the earliest opportunity. This is, of course, futile, and can bring nothing but discredit upon all concerned. It is

better to have no orthopaedic department at all than to make it a pretence. The essential and fundamental corner-stone of an Orthopaedic Department is a surgeon who knows his work and intends to devote his life to it. Less than this dooms any scheme to failure.

Organization of an Orthopaedic Department.

At the risk of repeating what I have said in other places I venture to put before you my ideas as to what an Orthopaedic Department attached to a university or teaching hospital should be. Whatever definition of Orthopaedic Surgery is adopted, the general surgeon should have a perfect right to admit into his wards, for teaching or other purposes, any case or as many as he likes included in that definition. The Orthopaedic Surgeon should alone be limited, and should be precluded from treating any other cases except those covered by the definition.

No Orthopaedic Department should be confined to the treatment of out-patients. It should be a complete unit, with beds commensurate with out-patient demands.

The staff should consist of an Orthopaedic Surgeon, who should be in charge of the department and be responsible for its efficient conduct. His practice out of hospital should be confined to Orthopaedic Surgery. He should have a seat on the medical board and hold rank equal to that of the general surgeon. An Orthopaedic Registrar or assistant surgeon, who should be selected as a man desirous of practising Orthopaedic Surgery. A house-surgeon, who should be appointed for at least six months, and clinical assistants and dressers.

The staff should run as a team, in which the nurses play an important part. It is important, therefore, that the matron should give security of tenure to the sisters in charge of the ward and out-patient department. It takes much time and perseverance to train nurses in this particular work, involving, as it must, the application of splints and the renewal of plasters; a considerable responsibility attaches to them. For these reasons they should remain part of the permanent staff.

In a hospital of 300 surgical beds I have estimated that forty should be retained for the orthopaedic service. They should be segregated. The department should have well-equipped physio-therapy rooms under the superintendence of a chief, who should, of course, be a member of our profession.

The orthopaedic registrar (or senior house-surgeon) should hold his appointment for at least two years. If his work proved sufficiently promising, opportunity should be given to him during his tenure of office to visit clinics at home and abroad in order that the hospital work and university teaching should be kept well in advance; this educational course should be financed from hospital funds, and the clinics to be visited could be arranged by the orthopaedic surgeon. The registrarship should be a whole-time appointment, and the assistant surgeon should be understudy to his chief.

The plan of one officer being appointed head of all sections of physio-therapy has much to recommend it. The post is a very responsible one, and presupposes a knowledge of massage, physical exercises, and electro-therapeutics, and possibly hydro-therapy. Although the physio-therapy department should be closely allied to the orthopaedic, it should still be independent of it, because it is a department used by all the physicians and surgeons.

Difficulties sometimes arise between the chief of the physio-therapy department and the rest of the staff on the question of responsibility. It is well, therefore, to define their relationship clearly in order to harmonize work. The rules which are in force at the Liverpool Royal Infirmary and St. Thomas's Hospital, London, with both of which hospitals I am associated, are satisfactory, and are as follows:

Rules for a Physio-therapy Department.

(*a*) In-patients can be sent to the department with general instructions that they require treatment. In such cases the nature of the treatment will be decided by the medical officer of the department, who will be entirely responsible for the case, and who will only refer such cases back at his own discretion or on a definite request from the physician or surgeon who originally had charge of the patient.

(*b*) Cases may be sent to the department by the physicians or surgeons with a definite request for certain detailed treatment. Such cases will be sent back to them at stated intervals. Should any sharp difference arise between the medical officers of the department and the honorary surgeon, the honoraries will take full responsibility.

(*c*) Cases sent by casualty surgeons should be under the control of the chief of department.

These, or similar rules, will settle the tendency to friction which might possibly occur, but obviously friendly consultation and understanding is the only real basis of good comradeship.

In a teaching hospital with a large out-patient clinic there is a great advantage in starting a workshop for the manufacture of splints. It is not only an economy, but it adds immensely to efficiency, and affords the surgeon an opportunity to develop his mechanical ideas.

The Scope of Orthopaedic Surgery.

When we begin to discuss the scope of orthopaedic surgery, the atmosphere is perhaps not quite so clear. On the one hand, it is desirable not to limit the activities of the general surgeon; on the other hand, it would be unfortunate to deprive the orthopaedic surgeon of work he has been trained to do. The general surgeon is protected by the right he undoubtedly has to treat any case he desires, and justice will be done to the orthopaedic surgeon if he is allowed to admit to his wards those cases which, in ordinary circumstances, he would undertake in private. I think these cases should consist of:

(*a*) Congenital and acquired deformities of the spine and extremities.
(*b*) Infantile paralysis after the acute stage.
(*c*) The deformities of adult paralysis.
(*d*) Stiff and ankylosed joints.
(*e*) Torticollis.
(*f*) Disabilities of joints, such as rupture of crucial ligaments, injuries to semilunar cartilage, snapping hip, slipping patellae, and those conditions which are included under the aggressive title of "bonesetting."

I think also that the orthopaedic surgeon should have the right, in common with the general surgeon, to treat recent fractures. If he is competent to deal with mal-united fractures, he should find it easier to prevent deformity than to reconstruct the limb. I have already dealt with the necessity of segregating fractures, and a very healthy rivalry would be maintained between all the surgeons interested in the branch of work if the cases were under close observation in one ward, presided over by nurses specially qualified to nurse them.

This definition admittedly covers a large area of surgery, and for this reason will attract the very best of our young surgeons. These are the men whom we specially desire to attract in order that they may devote themselves to a very intricate branch of work, bristling with problems which require solution, and demanding the highest operative skill.

The Teaching of Orthopaedic Surgery in a Medical School.

Well, given our Orthopaedic Department with its complete equipment and well organized staff, what part is it to take in the training of students? It should take a place, I maintain, proportionate to the area of work it covers.

It is useless to suggest that the student's time is already fully occupied. The endeavour is that it should be better occupied. All the subjects embraced in the definition have to be taught, and the proposal is that some of the teaching should be delegated to a department efficiently staffed for the work. The student is not asked to give more time, but is offered greater facilities for acquiring knowledge. I do not think that a university or teaching hospital can at first face the problem of training both graduate and undergraduate. The courses should be separate and, in the case of the graduate, he should have facilities for doing a considerable amount of clinical work. The undergraduate training is a more pressing and important problem. My suggestion is that a student is more fitted for orthopaedic training towards the end of his curriculum than at an early stage. It is, of course, essential that his attendance be made compulsory for a specified number of attendances.

The orthopaedic chief should carefully prepare a

systematic course of clinical instruction to be given once a week at an hour which fits into the curriculum, and the student should be required to show at least twenty attendances. The demonstration should last for about two hours. For instance, one afternoon might be devoted to the discussion of club-foot, illustrated by living specimens of every type; the deformity of the newly-born contrasted with that of later life; the nature of the deformities and the effects of weight-bearing; the fundamental principles of treatment governing success or failure; the various gaits and the tests of recovery. All this could be taught with a wealth of illustration, together with a detailed demonstration of the various methods of manipulation and fixation, and of muscle re-education. The student could here have instilled into him the tragedy of removing bone before a preliminary reduction of deformity by forcible means had been effected. The demonstrations should be simple in character, very practical and quite free from controversial matter. Most of his instruction could be given in the out-patient department, which is a more wholesome place for elementary study than the more attractive operation theatre. He should be thoroughly taught, and that by actual practice, the principles underlying the application of plaster and the objects to be obtained by appliances. All this can be done to great advantage if the cases are grouped in such numbers and order as to impress upon the student's mind the difference in degree and type. One afternoon could be devoted to stiff joints, starting with the various types of ankylosis; impressing the importance of position in regard to function; illustrating the various types of arthritis and the differential diagnosis between these conditions and joints bound down by adhesions; the mobilization of joints by safe methods contrasted with those of danger, ending by a practical exhibition of procedure. The student should not be allowed to leave the clinic until he has a knowledge of the practice of physiotherapy. There is no better place than the out-patient department for the teaching of the treatment of fractures of the upper extremities by splints with mobilization. The Orthopaedic Surgeon, in combination with any members of the staff who are interested, should form a committee in order to fix upon the appliances which, by reason of their simplicity and efficiency, may be safely standardized, and the student should be obliged to become thoroughly conversant with their use by frequent exercise in their application, both in the out-patient department and in the wards.

Country Hospitals for Crippled Children.

Country hospitals for children, staffed by well trained surgeons, are essential to any scheme dealing with cripples. Having been associated with such hospitals for over twenty years, I can speak with some authority. I have worked at hospitals where children are indoors day and night, in others where they are out during the day and in at night, and in others where the children are out day and night, and there is no comparison as to their relative values. Children out in the open air day and night are at a great advantage. I think one can prophesy that the time will soon come when the town hospital for children will practically cease to exist. The energy, vitality, and nutrition of the children brought up in open-air wards are a revelation to all who visit them. Infectious disease, the bane of closed wards, never spreads when the wards are fully exposed to fresh air; no matter how low the temperature, the children never take cold. Such a hospital should be attached to every teaching centre, and in every orthopaedic scheme it should hold an important place. This hospital should not be a convalescent home if by the term is meant that no active surgical work is done there. It should be equipped with an operating theatre, plaster rooms, and a physio-therapy installation. In this way nurses can be trained to do special work and obtain their massage certificates—which involve a working knowledge of electro-therapy—and young surgeons gain much-needed experience in the way of practical work.

Some of you may have seen such institutions. We have at Heswall, near Liverpool, due mainly to the vision and generosity of Mr. Andrew Gibson, one of the most beautifully situated hospitals in the world. It lies above the banks of the Dee, surrounded by heather, facing the Welsh hills. One side of each long ward is completely absent; and it is an inspiration to see how everybody—nurses, children, and staff—reflect the joy of living. Treatment is intensive, for every factor is present which ministers to recovery. The orthopaedic department should have a considerable number of beds in such an institution as this, retaining only a comparatively small number in the town for the more acute conditions and for the purpose of teaching. The surgeons from the city should have their regular visiting and operating days, and some of the clinics should be conducted there.

There is another type of hospital at Baschurch, in Shropshire, which was the first open-air hospital ever built. The wards consist of wooden sheds built upon an open field. The operating theatre and the post-operative wards were largely built by cripples. There are four well known orthopaedic surgeons attached to it—one lives in London, another in Birmingham, another in Oxford, and one in Liverpool. The operative work is all done on Sundays, and each surgeon pays a visit once a month. They are all busy men, and yet, so fascinating is the work and its environment, that they look forward to the visit with eager enthusiasm. This is a sufficient answer to any argument that may be employed in reference to distance. A country hospital in association with a teaching centre need, however, only be a few miles from the city.

This hospital at Baschurch has spread its net over a large area in Shropshire. The difficulty of reaching cases in an early stage and in securing adequate after-care, led to the formation of clinics or subcentres, in small townships. There are at present about seventeen of these. Every week or fortnight one of the house-surgeons, accompanied by an orthopaedic nurse, visits each centre. New cases are examined, treated, or referred to the main hospital. Old cases arrive for reapplication of plaster, splints, or appliances. In attendance at these clinics are usually found a representative from the medical officer of health, the school doctor, the local doctor, and representatives of the invalid cripple aid and child welfare societies. You can imagine how inspiring it is! This association and discussion in remote townships disseminates a spirit of helpfulness and enthusiasm which will largely help to solve the cripple problem. The National Scheme, drawn up by Mr. Girdlestone, and published by us,[1] now in the hands of the Central Committee for the Care of Cripples, was inspired by the work so excellently begun and carried on at these two open-air hospitals.

Diplomas and Degrees in Orthopaedic Surgery.

Post-graduate teaching must be prepared for two types of students—a short course for a graduate who can only spare a few weeks, and another of a more intimate kind for those who desire to qualify as expert orthopaedic surgeons. The former will be composed of men who feel the responsibility of not knowing, and should be welcomed and helped, and the tuition should be carefully planned so that the education may be intensive. The university should, however, be prepared with a higher course of training lasting from one to two years, in order to qualify the surgeon to be admitted for a diploma or a degree. During this course the student should be given every opportunity of approaching the subject in its scientific and practical bearing. His curriculum should not allow him an idle moment, and the anatomical, physiological and pathological departments should occupy a considerable portion of his time. If his work has been satisfactory he may obtain a diploma from the university at the end of the first year; and if he studies for the second year he will require to take an assistant's position at one of the hospitals, perform most of the operations that may be required of him in practice, and write a thesis based upon original research. This may secure for him a university degree in orthopaedic surgery. I am pleased to say that, on the initiative of Professor Adami, our Vice-Chancellor at the University of Liverpool, we are engaged in working out the details of such a scheme for the advanced group.

Proposed Orthopaedic Department for the University of Edinburgh.

Now may I be allowed to refer to the University of Edinburgh, which, I am rejoiced to learn, is about to found an Orthopaedic Lectureship? I do this with less hesitation as I am sure that such old friends as Professor Alexis Thomson and Sir Harold Stiles will pardon an enthusiast who loves his art perhaps to the verge of indiscretion. Edinburgh is the largest medical school it

the British Empire, and has traditions envied by all. For generations it was the last word in education. Its graduates are found in every part of the globe, and they display an affection for their Alma Mater and an admiration for their teachers which in my experience is unique. For years I appointed as my house-surgeons Edinburgh graduates, not because of their practical knowledge, which was often deficient, but because they had been carefully taught how to observe. There were many men who had come into closer contact with their patients, who had been given more responsibility, but for receptivity of mind and the ingestion of new ideas the Edinburgh student always excelled. In early days, when views I held were less popular, I knew so well their incredulous look, and how closely one had to reason in order to convince. I recall the case of one man, now a distinguished orthopaedic surgeon and a close friend, who, after following my rapid flight around a ward, pushed into the board-room when I was putting on my coat, leaned against the table, and almost angrily pelted questions at me; and when in a timid way I tried to answer him, he clinched all argument by an unanswerable sentence: "This is not Edinburgh teaching." Edinburgh graduates, over and over again, have complained to me of their lack in orthopaedic training even up to recent years.

This is not worthy of a university of so singular a reputation, and which has always displayed an almost fatherly solicitude for the efficiency of its graduates. Now that it is about to make up for its deficiency, I commend for its consideration a scheme such as that which I have advanced. When the work starts let it begin on good lines for defects soon become stereotyped, and are always difficult to amend. At St. Thomas's Hospital in London they have started their department on progressive lines. At King's College in London, also, a distinguished orthopaedic surgeon runs his unit, and has been granted forty beds together with the treatment of fractures. I would like to see the new Orthopaedic Department at Edinburgh add lustre to the glorious traditions of the University.

With the generous gift, which is soon to be expended on a new country hospital, what a magnificent prospect is opened up! It can be started on the most modern lines, with an unequalled equipment. I trust the children will be allowed to live in the open air. Surgeons might renew their youth by working in such ideal surroundings, and the child have the benefit of skilled supervision from first to last. The chronic case could be educated, trades taught him, and a spirit of joy and hope would reign. Those who minister to it in any capacity will realize that they are not only doing a personal and kindly service, but one of invaluable importance to the State. I should rejoice to see such an institution become a national centre for the prevention and cure of cripples in Scotland, spreading its influence over the whole of the land, and conducting an educational and reconstructive campaign of inestimable service to mankind.

REFERENCE.

[1] BRITISH MEDICAL JOURNAL, October 11th, 1919, p. 457.

A PRELIMINARY NOTE ON THE USE OF VITEX PEDUNCULARIS IN MALARIAL FEVER AND IN BLACKWATER FEVER.

BY

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LATE CIVIL SURGEON OF RANCHI.

HAVING noted the occurrence of a large number of cases of blackwater fever, and also of very severe malignant malaria in the Ranchi district, I made inquiries as to whether there were in this locality any plant with virtues similar to those of *Aphloeia theaeformis* (which is used in these conditions in Madagascar), and was informed that there is such a plant actually used by the aboriginal tribes, and that blackwater fever does actually occur among them was evident enough from the clear description of its leading symptoms given me by one of themselves, who sent me samples of the leaf of the plant used.

This plant is locally known by various names:

1. Hindi ..... Minjurgorwa, Chhagriamba, Charaigorwa, Nagpheni, Nagbail,
2. Uraon ..... Eratakha.
3. Kol ..... Simjanga.
4. Bengali ..... Baruna, Goda.
5. Assamese ... Osal.
6. Santali ..... Badumarak, Bhadumarak.
7. Cachari ..... Hila Anwal, Krawra (Pra-n).
8. Garo ..... Shelangri.
9. ,, ... Navaladi.
10. Burmese ... Kyetyo.

Of these vernacular names, numbers 4 to 10 have been taken from J. S. Gamble's *Manual of Indian Timbers*, 1902 edition, p. 541. The superintendent of the Royal Botanic Garden at Sibpur has identified the plant botanically as the *Vitex peduncularis* Wall (variety *roxburghiana*). I find it mentioned also in Kirtikar's and Basu's *Indian Medicinal Plants*, Part II, page 1001, and figured, but not very accurately, in their plate No. 741. They give its habitat as "Bihar at Parasnath, Eastern Bengal, and Khasia Terai," and state that "in Chutia Nagpur the bark is used for making an external application for pains in the chest (Rev. A. Campbell)."

The plant is fully described in the two works mentioned above, and in Haines's *Forest Flora of Chota Nagpur*. It is only necessary to add that the leaf characters vary somewhat with the age of the plant, the petiolar expansion on the leaf stem being very inconstant in the older specimens. The aborigines state that there is a variety of vitex with a dark-coloured root—they call it a "red root"—and that this is better to use than the usual pale-rooted plant, which, however, is the only kind I have been so far able to obtain and to use.

My information is that it is used in various ways, chiefly as an infusion of the leaves or of the root bark or young stem bark, in fever of malarial type, and especially in blackwater fever. As to the dosage, I followed in the first instance, since October, 1919, and in the main still follow, what amounts practically to the original directions given me by my Uraon informant as regards the method of use. These are as follows:

Two ounces of the leaf used fresh, or dried in the shade, is dropped into 40 oz. of boiling water, and is boiled in it for five to ten minutes, and then allowed to soak in the water in which it has been boiled, for an hour at least. The resulting infusion, amounting to about 40 oz., is poured off the soaking leaf and given as required in doses of about 8 to 10 oz., distributed over twenty-four hours, or given over the day only, the patient resting all night undisturbed. The infusion is of about the colour of strong cold tea and not unlike it in taste, and is given sweetened with a little sugar to taste.

As soon as we decided by the results that the infusion was quite a useful preparation, we attempted to prepare a concentrated infusion on the lines of the infusum gentianæ compositum (conc.) of the *British Pharmacopoeia*. This has also proved useful, but we found it less reliable than the simple infusion of 1 oz. to 2 oz. of leaf yielding 40 oz. of infusion with plain water. With further experience we found it in certain cases necessary to give larger doses, and to avoid too great a volume in each dose we prepared a 40 oz. infusion from 1, 2, and 4 oz. of leaf, and we called these, for easy reference, infusions of 1 in 40, 2 in 40, and 4 in 40 strengths, and used these as required.

As to results, generally speaking, in malarial fever, we have in almost all instances identified the parasite of malaria before commencing the treatment. This preliminary has only been omitted in a very few of the cases on which this paper is based, and these latter have been, I think, quite undoubted cases of malaria also. The results, as a whole, show that, whereas there are cases that will quite readily yield to a 1 in 40 infusion, there are others that require a very much larger dosage. This may be due to, perhaps, the fact that we have not so far been able to standardize dosage, as the active principle has of course not yet been identified. The actual experience with the use of both the infusion and the concentrated infusion has been that, whereas a proportion of cases have quite readily yielded to a dosage based on the infusion of 40 oz. of infusion from 1 oz. of leaf given over twenty-four hours of administration, and have yielded in some cases in twenty-four hours and in others in the course of seventy-two hours, there have been other cases which have not yielded even in seventy-two hours, but which have yielded at once when the dose was doubled or considerably increased by either giving a larger actual dose of the 1 oz. to 40 oz. infusion, or by using a very much stronger infusion, even up to one of 4 oz. of leaf to the 40 oz. infusion, and there are others which have been even more obstinate. The results, however, have been uniformly encouraging.

The drug seems to have no toxicity at all in the dosages

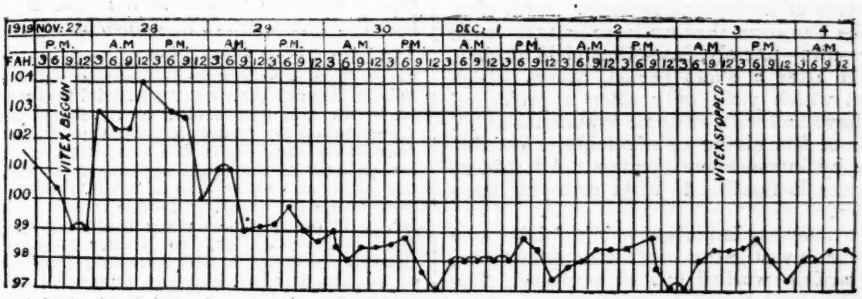
so far employed, and children have actually been given relatively very much larger doses; indeed, practically the same actual dose as adults, and there are no disagreeable after effects. I append below short notes of some of the cases treated.

As regards the use of vitex infusion in blackwater fever I have so far, naturally, not had much opportunity. I sent out some of this leaf (before we had had it identified) to certain officers of the Forest Department in response to a request from one of them, and it was used in simple infusion in a case of blackwater fever occurring in a forest ranger, and the report is given below charted out. His urine cleared to a natural colour after nine doses of infusion of 1 oz. of leaf to 40 oz. of water given over forty-eight hours, and he made a complete recovery. I also sent some of the leaf to Dr. A. T. Williams, of Kettelah in Assam, recommending him to try it in blackwater fever, and he had the good fortune to get a very severe case which is referred to below. His telegram to me regarding this case sums it up in the words, "Bad case, ten pints infusion completely cleared specimen, recovery." This infusion was also of 1 oz. of leaf to 40 oz. of water.

I would next briefly review some of the cases treated with the preparations so far used made from the leaf.

(A) MALARIAL FEVER.

Case 1.—Sister Sr., an Indian nun, contracted malaria in Rengari, a very malarial locality, in July, 1919. Had been given quinine freely, which checked the fever, but it always came on again at a few days' interval. Admitted in the latter part of October and treated with gr. 5 quinine sulphate tabloids for some days with practically no effect, and with quininism following. The temperature on October 26th, 1919, was 102.2°, on October 28th, 100°, when malignant tertian parasites were found. Infusion vitex 1 oz. to 40 oz. infusion, given in the afternoon and repeated four-hourly, and continued until November 3rd. No fever from the morning of October 28th; observation continued until November 7th. No fever all this time and parasites absent from November 4th.



Infusion of vitex 1 in 40 was given from 8.15 p.m. on November 27th, and continued regularly every four hours till noon on December 3rd, when it was stopped; no other drug was employed. The urine, which was blackish-red on November 27th, began to clear on November 28th, became natural in colour about 6 p.m. on November 29th, and continued so.

Case 2.—Timothy, native Christian. Had suffered for several days from fever and had kept at work; treated with 8 gr. quinine tabloids t.d.s. for three days. No effect. Blood examined, malignant rings found; put on infusion vitex 1 in 40, and fever absolutely ceased. Kept in hospital for nine days and on treatment, during which time had no fever; discharged. Under observation for fourteen days. No fever.

Case 3.—P. B. B., Bengali male. Admitted on October 30th, 1919. Temperature 104°. Benign tertian. No fever on October 31st or on November 1st. Fever recurred November 2nd, parasite found on the 3rd, and patient put on infusion vitex 1 in 40. No more fever. Under observation for over ten days.

Case 4.—Sister St., Indian nun from Rengari. Fever since July. Repeatedly treated with quinine. The temperature on November 5th, 1919, was 104°, on the 6th 102°, and on the 7th 99°. Malignant tertian parasite found. She was not admitted to hospital, and took at the convent vitex infusion 1 in 40 in half quantities only, with practically no effect until November 15th, when she was admitted to hospital and put on full dosage. The temperature after this gradually and steadily came down, and, with the exception of one rise on November 20th, to 103°, which fell next day to normal, she had no more fever, and has since made a good recovery. In this case it was clear that the half quantity of infusion was too small a dose.

Case 5.—European male adult. Had frequently had severe malaria. Present attack began on October 28th, 1919, with temperature 104°, when he treated himself with aspirin and quinine—the latter in doses of 24 grains daily—until November 5th, on which day blood showed malignant tertian parasites, and temperature went to 105°, and quinine was discontinued. On the 6th put on infusion vitex conc. ½ oz. four-hourly. Temperature rose again to 105°, and on 7th to 105.4°. On the 8th he was put on 1 oz. of the infusion vitex conc. four-hourly, and temperature fell to 103.6°. On the next day he was put on the simple infusion 1 in 40, and the temperature dropped to normal, and has not risen since.

Case 6.—Mohammedan male, aged about 36. Fever began about December 4th, 1919, and rose on 6th to 103.6° when he came under treatment of an Indian colleague and was put on a fever mixture without quinine. On the 7th the fever fell to normal, after which he was given quinine sulph., gr. 20. The same evening it rose to 103° and continued at this level till the evening of the 8th, no further quinine being given. On the evening of the 9th it rose again, and on the forenoon of the 10th he was in delirium. I examined the blood on the afternoon of the 11th and from 6 p.m. of that day, malignant tertian parasites having been found, he was put on the 1 in 40 infusion of vitex leaf. By this time he had been continuously in mild delirium for some twenty-seven hours and his temperature was 103.6°. By the morning of the 12th he was free of delirium and of fever and has had no return of high temperature. Vitex was stopped on the 14th. I saw this man again some four months later. He had had no return of malaria during this period.

Case 7.—Hilda, Christian aboriginal, aged 15. Had fever at home on December 13th and 14th, 1919. Admitted with temperature 104° on the 15th. No quinine history. On the 16th temperature 104°. Malignant parasites found next day, and patient put on vitex infusion 1 in 40. That evening temperature 102°; on the 18th, 100.4°, on the 19th, 98°, and normal since.

Case 8.—Anandini, Christian aboriginal girl, aged 9. Had had fever for a long time off and on. Admitted to hospital with no quinine history and with a temperature well over 106°. Malignant parasites found on December 16th, 1919, and patient put on infusion vitex conc. 2 drachms every four hours. Temperature on 16th 102.4°, on 18th 98.4°, on 19th 100°, and normal since. Vitex continued until December 22nd; no fever since.

(B) BLACKWATER FEVER.

Case 1.—Dr. A. T. Williams's first case was that of a European tea-planter, a young man of very good physique. Had a previous attack of blackwater fever in 1918; no details available. Then had six months' leave to Australia; back in India in February, 1919. Always neglected quinine prophylaxis and had repeated attacks of fever, generally feeling below par. Had lately been taking a tonic, and felt fitter. On November 16th, 1919, woke up feeling exceptionally fit after a week of intermittent fever (malaria) during which he had had a maximum temperature of 104° with depression. At 1.10 p.m. passed about 3 oz. of port wine coloured urine. At 2.45 p.m. passed another 6 oz. of the same, and had a rigor and went to bed. Administration of the infusion of vitex leaves 1 in 40 was immediately started. He took it readily and quite liked it. In the evening urine was almost black. By 11.15 p.m. retching and vomiting. At 11.30 p.m. rigor, and temperature 102°, cramps in fingers and legs. No sleep. Colour bad; circumoral pallor. November 17th: Deep icterus—one large natural stool, pasty; persistent retching and vomiting all day, neither the infusion nor anything else being retained in the afternoon. Iodine, acid. hydrocyanic. dil., mustard plasters to epigastrium, and a blister over course of vagus in neck were all tried without success; thirst excessive, mouth very dry. Cramps; vomited matter scanty and "coffee grounds." Rectal salines given copiously. Pulse kept astonishingly good. Total urine of twenty-four hours was 57 oz. of deep claret, almost black, colour. Rectal feeds from the evening. November 18th: Prostration excessive. Champagne, salines and food by rectum. Three six-ounce feeds retained in twelve hours. Vomiting seemed checked by further acid. hydrocyanic. dil. Urine began to clear noticeably about noon and continued to clear through the day. Very restless at night. Morphine gr. ¼, thirst severe, sleep very broken till 3 a.m. of 18th-19th, and then good till 6.30 a.m of 19th, November 19th: Marked improvement, no vomiting, resting quietly, thirst less, urine steadily clearing and almost clear by night. Secretion of urine less. November 20th: Urine quite clear. Went right ahead from this onwards, and never looked back.

The urine began to clear forty-eight hours after the infusion was started and continued to clear in spite of a rise of temperature on November 18th. Nothing was given except the infusion. The total amount drunk was approximately 10 pints, but the first five pints were only half strength.

Case 2.—Dr. Williams's second case was that of a Bengali clerk who is alleged to have had two previous attacks. When first seen he had almost complete suppression of urine and severe vomiting. He took about 2 pints of the infusion and refused to touch any more. Everything was tried to get his kidneys going, but without effect. A catheter specimen, obtained about six hours before death, was much clearer than the first lot seen. (These cases of Dr. Williams's are given practically in his own words.)

Case 3.—On November 22nd I received a telegram from the Forest Officer at Manharpur, stating that a forest ranger was down with blackwater fever and asking for vitex leaf (which had not then been really identified botanically). I sent some at once, but it was not until the evening of the 27th that the patient received them. Administration of vitex infusion was

begun at once and continued four-hourly. The urine cleared in thirty-six hours and the temperature dropped.

Besides the cases noted in this paper we have treated with vitex in Ranchi some 60 cases of malarial fever, and we have under treatment a case of blackwater fever which occurred at Rengari in a European nun.

This patient had recovered from the original attack of blackwater fever under treatment with *Aphloeia theaeformis*, and was brought into Ranchi with her urine still very dark and with abundance of bile in it, and obviously on the edge of a relapse. She was a very severe case to start with, and was in a very critical condition on arrival here. Under infusion of vitex (2 in 40) her urine absolutely cleared in thirty-six hours, her fever came down, and she has made a very good recovery so far.

Now to sum up the results generally. It must, in the first place, be strictly borne in mind that we are but at the very beginning of a very important investigation. It must not be forgotten that in the treatment of malarial fever with quinine—taking the average results of all practice—we get very varying results. There are cases treated with quinine which yield at once in the most gratifying fashion very shortly, if not immediately, after the commencement of treatment. There are others which yield after a week or so, others which persist longer, and others, again, of obstinate types which yield only after the most drastic treatment, or after prolonged treatment, and we are tempted in some few of these latter to ask what the real effect of quinine has been, and whether it has really had any effect. We are accustomed to regard quinine as the specific for malaria, and in prolonged cases yielding only after an obstinate fight we say in practice that quinine has succeeded only after a determined exhibition of it. I am referring now to cases of undoubted malaria. Now, with vitex my experience has been that we have had the same series of varying results—namely, cases that yield at once, others which yield after a short period, others which persist, and others which yield only after a prolonged struggle; and we have had with vitex no experience at all comparable to that of the giving of alkaloids of quinine hypodermically or by intravenous injection. All this, as regards quinine cases, is familiar to most men practising in malarial countries.

There is, however, one very important point of difference at this stage of our investigation, for with quinine we have the finished article worked out to a nicety. The original article was a wild South American forest plant, and now we have all its alkaloidal products differentiated, and the alkaloids have doses that are standards unto themselves and recognized as such. We know the clinical standard value of each of them, and when we come to use them we more or less know what we are dealing with—more with reference to the chemical constitution of the drug we are using, less with reference to what I may perhaps allude to as the coefficient of virulence and resistance to drugs of the particular malaria under treatment. With these two opposing factors we get our varying clinical results with quinine and its allied alkaloids—that is to say, with a series of drugs which have something of a recognized clinical standard value of efficiency. On the other hand, vitex is at present in the stage approximately in which cinchona was when first discovered in the Peruvian forests. The cases I record are the very first fruits, and the singular value of these first observations lies in (1) the extraordinary parallel in the types of the results of treatment with quinine on the one hand and vitex on the other; (2) the extremely encouraging general result of cure which, so far, has practically been as uniform as with quinine. It must be borne in mind that vitex is now in the position in which cinchona was when first discovered—a drug used only in the crudest way by aborigines. The way in which I have so far used it is the aboriginal method. Its results have been good.

I would next point out certain further details and differences.

1. Quinine is extremely bitter; vitex is not so.
2. Quinine produces many troublesome effects and after-effects which I need not dilate on, and is toxic. Vitex produces nothing approaching quininism, and seems to be absolutely non-toxic, and, so far, has given no unpleasant after-effects.
3. Quinine is known to have definite depressing effects on the heart and circulation; vitex, after its use, produces a feeling of well-being, is mildly stimulant, appears to have no depressing effect on the heart, and has a clear diuretic effect.
4. Quinine is oxytocic, and there are dangers in giving it in pregnancy. Vitex, as far as our experience of it goes, has apparently no such dangers attending its administration.

It would appear, therefore, that in *Vitex peduncularis* it may yet be found that we have a most valuable remedy for malaria, and that all that is needed is to work out its properties in detail.

I would add one interesting point which, however, needs investigation. Mr. McLeod Smith, the subdivisional officer of Simdega, tells me that during the last outbreak of influenza in 1918–19 those villages that were accustomed to use this plant for malaria used it in the influenza outbreak and had a mortality definitely lower than those other villages which did not use it. This is but a loose observation from a layman, but acting on it I have so far used it in a few cases of obvious influenza which have recently occurred, with a complete relief resulting after three doses in twenty-four hours of the 2 in 40 infusion of leaf. I give this for what it may be worth as an isolated observation, but I shall push it if opportunity offers.

The root bark and stem bark are also about as useful as the leaves for all purposes for which the latter may be used. This is to a large extent confirmed in my experience.

The infusion of leaves and bark is said to be useful in cystitis. I have found it so in one case. I certainly find it an excellent diuretic.

In vitex it may be that we shall find active principles which will give us all the power of quinine in malaria without many of the dangers and drawbacks of quinine and its allied alkaloids, and we have the most important additional clinical value of this plant in blackwater fever, the scourge of our forest areas and of the submontane tea districts. If future investigation confirms the value of this plant in malaria, it must be strictly preserved in the forest areas of the country. It is widely distributed, perhaps, but none too abundant where it occurs. One may find a hundred plants on a single acre, and travel over miles of forest before he comes across another plant.

Finally, I must express my obligations to all who have helped me in this investigation so far; to Kuril Kerketta of Kuruskela in Ranchi District, my aboriginal informant, who put me on to the leaf and plant; to Mr. David McLeod Smith, subdivisional officer of Simdega in this district, for his keen all-round help, and for much information as to the aboriginal and local names of the plant and its local uses, and for collecting the leaves and bark; also to Mr. E. Durham-Waite for the first clear botanical specimens put up; and to Miss McDonald and Dr. Arit of the Society for the Propagation of the Gospel Mission Hospital, and to Mother Henriette of the Ursuline Convent at Ranchi, and Assistant Surgeon Garib Das Gupta at Ranchi, and Subassistant Surgeon Khudiram Mukerjee of Simdega, for all the help they have given me in various ways in clinical work, and in collecting leaf and bark.

DETAIL OF PREPARATION SO FAR USED.

1. *Infusion of leaf*—in three strengths, as detailed in the foregoing notes—1 in 40, 2 in 40, 4 in 40.

2. *Concentrated infusion of leaf.*

Powdered leaf	...	...	...	...	8 oz.
Sp. vin. rect.	...	...	...	...	2½ oz.
Aqua chloroformi	...	...	...	ad	12 oz.

Make up to 12 oz. with aqua chloroformi after a week's percolation and straining off liquid. *Dose:* Half to one ounce every four hours. Found as good as leaf infusions (1).

3. *Fresh stem bark extract.*

Ground bark	...	...	...	...	4½ oz.
Sp. vin. rect.	...	...	...	...	6 oz.
Aqua chloroformi	...	...	...	ad	30 oz.

Percolate for a week, and make up liquid with aqua chloroformi to 30 oz. *Dose:* Four to six teaspoonfuls every four hours. Found about as effective as leaf infusions (1).

DILATATION OF THE HEART.

BY

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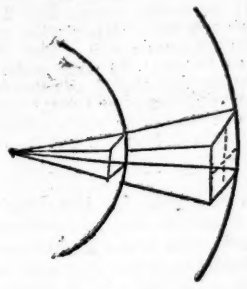
THE mechanical disadvantages under which a dilated heart labours are not likely to be adequately realized till the influence of size on the working conditions of the heart is more fully grasped. The heart is commonly thought of as so much muscle, better or worse nourished, and better or worse controlled; whereas the factor of the size of the chamber it encloses is largely overlooked, though of immense importance to its working.

Now, if four lines be drawn from the centre of two concentric spherical surfaces through both surfaces, as in the diagram, the diameter of one sphere being double that of the other, the area enclosed between the points of passage of the first surface will obviously be but one-quarter of that for the second.

If a sphere dilate, therefore, to twice its diameter or radius, it would have an internal surface area four times as large as before, and its walls, to cover that greater surface, would necessarily become four times as thin. It may be objected that the heart is not a sphere; the same principle, however, applies, so that if the heart were dilated to double its diameter its inner surface would be approximately four times as large, and the heart walls four times as thin. For this reason alone it would be roughly four times as difficult for the heart to contract on its contained blood, there being four times the area of blood to contract on, or four times the number of units of area of blood to resist its contraction.



This, however, is not the whole difficulty, for the heart's power of exerting a pressure on its contents becomes halved when its diameter is doubled, so that while the work to be done is quadrupled, the working power is halved, or, in other words, the heart's embarrassments are increased eightfold.

The proof that the working power of the heart is thus lowered may be presented as follows: The force with which a hollow rubber or muscular sphere can contract on its contents is merely the force with which one-half of the sphere can pull the other half towards itself, and is measured by the pull across any circumference.

If p = the pull of a unit of muscle;
" c = the length of circumference, which is $2\pi r$, where r is the radius;
" t = the thickness of muscle at the circumference;
then pct = the pull across the whole circumference drawing the two halves of the hollow sphere together, and so compressing its contents.

Now pct is the same as $p2\pi rt$, but I have already pointed out that t, the thickness, becomes four times less when r, the radius, is doubled.

When, therefore, the sphere is doubled in radius or diameter the pull across the circumference is doubled in virtue of the circumference being double as long, but it is one-quarter in strength in view of the fact that the muscular material is only one-quarter as thick. On the whole, therefore, the pull is halved.

If the sphere were further dilated, say to three times its former radius, the pull would amount to $p\ 2\pi\ 3r\frac{t}{9}$, or, in other words, it would gain threefold by the increase in circumference, and lose ninefold by the decrease in thickness, since the thickness decreases inversely as the square of the radius, as already shown.

Though the heart is not a true sphere it is a hollow roundish viscus, and, in its measure, is subject to the same physical principles. When enlarged it has more units of surface of blood, increasing, more or less, as the square of the diameter to resist its pressure; and it has less power to contract, the power changing in inverse ratio to the diameter.

From these two causes combined, the compression the heart can exert on its contents would decrease eightfold if the diameter of its chamber were doubled, and twenty-seven-fold if the diameter were trebled — that is, it varies always inversely as the *cube* of the diameter or radius.

As applied to the heart or any hollow viscus in the body, such as the bladder or uterus, these figures must not be taken as of any definite value, other than showing a physical principle to which they are subject, and the immense mechanical drawback of dilatation.

This consideration shows why "breaking the waters" when delivery is well advanced is followed by such powerful contractions on the foetus. It is quite likely that the contractions are no more powerful than before, but merely more efficient. The surface to contract on is smaller, and the two halves of the uterus can be drawn towards one another with more force, simply because the uterus is thickened. With less to contract on and a thicker contracting wall no increased muscular effort is required to produce an enormously increased expulsive effect, the pressure on the foetus could, more or less, rise inversely as the cube of the decrease in diameter.

A dilated heart may be greatly relieved by blood-letting, because it allows the distended ventricle to contract; and, once contracted, the muscle wall may, at least for a while, prevent its chamber from becoming over-large again, for it is much easier to keep a chamber small than to reduce it when once large.

I have endeavoured to show in many papers in the BRITISH MEDICAL JOURNAL and elsewhere, in the past, that the same physical principle applied to the auricle probably explains most that is puzzling in the behaviour of the heart in mitral stenosis. The presystolic crescendo murmur and its running up to and into the first sound, the absence of ventricular regurgitation through an incompetent mitral valve, the presence of regurgitation and a systolic murmur replacing the presystolic when the auricle later on dilates and allows regurgitation into it, and so on.

The important thing, however, to first realize is that the size of the cardiac chamber at any time determines, more than is readily imagined possible, the power of the heart to empty itself, the heart weakening, as it dilates, inversely, more or less, as the *cube* of the dilatation.

A STUDY OF THE PNEUMOCOCCUS AND STREPTOCOCCUS GROUPS IN THEIR RELATION TO INFLUENZA.*

BY

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(*Abstract of Report to the Medical Research Council, from the Research Laboratory of the Royal College of Physicians, Edinburgh; Professor James Ritchie, Superintendent.*)

THE object of this investigation was a study of the pneumococci and streptococci from cases of epidemic influenza, firstly in their relation to the earliest stage of illness, when the infection was presumably a comparatively pure one; and, secondly, with regard to their part in the more advanced cases, when pulmonary complications had set in.

The preliminary portion of the inquiry was directed to questions of technique. It was necessary to define precisely what constitutes a pneumococcus and what a streptococcus, and what criteria may be adopted for distinguishing various types of these organisms from one another. It was concluded that, while there are various properties which, if taken together, may serve to distinguish the pneumococcus and streptococcus groups from each other, there is only one test which, if used as a single test, can serve to differentiate the two groups—the bile test. The solubility of pneumococcus in bile, apparently an empirical reaction, is nevertheless an indication of a specific chemical constitution of the pneumococcus, which it does not share with the streptococcus group. This test was then adopted as the invariable means of distinguishing the two groups, while the other tests in common use—inulin fermentation, presence of capsule, type of colony, morphology, virulence to mice, power of growth in certain media, homogeneity or granularity of growth in plain broth, etc., were used only as secondary confirmatory tests.

The methods adopted for differentiating the different types of organisms within these two groups were for the pneumococci serological, agglutination tests with the Rockefeller Types I, II, and III serums being carried out; for the streptococci, biochemical, fermentation and haemolytic tests being used.

The cases studied may be taken as typical of those occurring in the Edinburgh district during the second and third waves of the epidemic, that is, during those outbreaks which reached their height in November, 1918, and in February, 1919. One hundred and eight cases were studied completely from the point of view of their

* Advance reports on this subject have already been communicated as follows: (1) Preliminary Report to the Medical Research Committee, April, 1919; (2) Paper read before the Edinburgh Medico-Chirurgical Society, May 14th, 1919, and published by the *Edinburgh Medical Journal*, July, 1919; and (3) Paper read before the Pathological Society of Great Britain and Ireland, July, 1919; the Report (4) of which the present paper is an abstract was sent to the Medical Research Committee in April, 1920, and will be published in the *Edinburgh Medical Journal*.

pneumococci and streptococci; seventy-five were civilians, the remainder soldiers.

Specimens from cases of "pure influenza" were usually taken during the first three days of illness; from cases with pulmonary complications naturally, as a rule, at a later stage, varying from three days upwards. From the former group of cases nasopharyngeal swabs were usually employed; from the latter, sputum. Forty of these specimens were plated out direct on media suitable for pneumococcus; in the remaining sixty-eight a preliminary passage through mice with subsequent plating from heart blood and peritoneum was used along with direct plating of the specimen on suitable media.

The Incidence of Pneumococci and Streptococci in the Cases.

Pure Influenza Cases.—In this group of cases pneumococcus was isolated from 6 out of 44 cases, or from 13.6 per cent.; while streptococci were obtained from 44 out of the same 44 cases, or from 100 per cent.

Cases of Influenza with Pulmonary Complications.—From the second group of cases pneumococci were isolated from 50 out of 64 cases, that is, from 78.1 per cent.; streptococci were isolated from all the 64 cases, or 100 per cent.

It was therefore possible to draw the conclusion that the pneumococcus group played little part in the cases of pure influenza, and could therefore be excluded from the list of suspected initiating agents; that its great increase in number in the cases suffering from pulmonary complications, having in mind the known pathogenicity of many pneumococci, suggested an important rôle in these complications. It was further shown that streptococci were invariably present in both simple and complicated cases.

The next step was therefore to ascertain if these pneumococci in the secondary complications were of one type, and similarly if the streptococci of the simple and complicated cases differed on the one hand from each other, and on the other hand from the streptococci normally inhabiting the mouths of human beings.

Types of Pneumococci Present.—Fifty-one strains of bile soluble diplococci from 34 cases of influenza were typed out, using Rockefeller I, II and III serums. Of these 34 cases three yielded Type I pneumococcus, three Type II pneumococcus, two Type III pneumococcus, and 26 pneumococci of Group IV. An attempt was made further to subdivide the Group IV pneumococci with the object of determining whether those present in influenza were or were not the same as those sometimes obtained from healthy throats. The attempt was unsuccessful.

Types of Pneumococci in relation to Types of Clinical Case.—The eight strains of Types I, II and III pneumococci were, with one technical exception, derived from cases with well-marked pulmonary involvement, in each case with consolidation, shown either clinically or at *post-mortem* examination. The exception was a case of "pure influenza," showing no pulmonary symptoms at the time a Type I pneumococcus was obtained; she manifested pulmonary symptoms within a day or two and died within a week of pneumonia. One of the Type II pneumococci was from a lobar pneumonia in which the existence of influenza was doubtful.

The Group IV pneumococci were derived from cases of pure influenza; from cases of influenzal bronchitis; from cases of influenzal bronchopneumonia; and from cases in which, as shown both clinically and by *post-mortem* examination, extensive consolidation was present. They were isolated from cases in which the illness was trivial, from cases in which a very chronic chest condition supervened, and from cases with a rapidly fatal termination.

Incidence of Haemolytic and Non-Haemolytic Streptococci.

For the purpose of differentiation the action on blood agar was employed.

One hundred and nine strains of streptococci derived from 57 cases were subjected to the test. From 28 cases of pure influenza haemolytic streptococci were not once obtained; of 29 cases with pulmonary complications, 8 yielded haemolytic streptococci, or 28 per cent. of these complicated cases.

The Haemolytic Streptococci.—The same conclusion was thus arrived at with regard to the haemolytic streptococci as had been come to concerning the pneumococci; there was evidence that they played no part in the production of pure influenza, but they were apparently active as secondary invaders of the lung in more than a quarter of the cases with pulmonary complications, as compared with the figure of three-quarters of the cases obtained for the pneumococci.

The Non-Haemolytic Streptococci.—These were obtained from all the cases examined save two. In these two, haemolytic streptococci were obtained in the culture, in one from lung substance (*post mortem*), in the other from empyema pus. Holman's classification for the non-haemolytic streptococci was adopted. Ninety strains, derived from 46 cases, were tested in this way. Seventy-seven of these were grouped as follows: *faecalis*, 0; *non-haemolyticus I*, 1; *mitis*, 44; *salivarius*, 26; *non-haemolyticus II*, 1; *non-haemolyticus III*, 0; *equinus*, 5; of the remaining 13 strains, 9 were either *mitis* or *salivarius*; 4 either *faecalis* or *non-haemolyticus I*. The 90 strains may therefore be grouped as follows: 79 were either *mitis* or *salivarius*, while 11 were of other varieties. As regards their case incidence, either *mitis* or *salivarius*, or both, were obtained from 21 out of 22 cases of pure influenza; while either *mitis* or *salivarius*, or both, were obtained from 22 out of 24 cases with pulmonary complications.

Assuming Holman's tests to be adequate for the differentiation of these organisms, one would be able to conclude that their presence in cases of influenza is not significant of an infection from without, as such types are met with in normal mouths. Evidence will be produced, which cannot be given in detail here, to show that Holman's tests are not adequate for this purpose. Taking other factors into consideration, however, the conclusion was arrived at that it was in the highest degree improbable that organisms of this group were responsible as initiating agents in the epidemic; while as to their rôle in the secondary complications, there was little doubt that some members of this group, possibly even the saprophytic varieties, played a part in the complicated cases.

Summary of Conclusions.

In this brief summary of the results obtained proof of many of the statements has necessarily been omitted; these proofs will be included in the detailed paper. Here I may add some of the main conclusions. Only the pneumococcus and streptoccccus groups are dealt with.

It was shown that pneumococci and aerobic streptococci could be cleared of suspicion of acting as initiating organismal causes in the epidemics; that the pathogenic organisms of these groups which were associated with the production of pulmonary complications were of a variety of types; that many of these were definitely infections from without, while with the remainder limitations of technique prevented exact proof as to their origin being brought forward; that the presence of saprophytic streptococci and of presumably saprophytic pneumococci in the lungs of many advanced cases may be explained as a late invasion of the already diseased lung, either by the patient's own mouth organisms or by the saprophytic mouth organisms passed on from another patient, while their presence in the sputum is, in many cases, due simply to the contamination of the specimen with organisms from throat and mouth.

Both from the point of view of the history of the individual case and from that of the history of the epidemic itself, one may divide influenza into three stages: a primary stage, when the unknown infecting virus, whether it be Pfeiffer's bacillus or some other organism, is apparently *acting* alone, though presumably frequently accompanied by other organisms which may or may not later be able to develop a like activity; a secondary stage, when pathogenic pneumococci and streptococci are active in producing pulmonary complications, either alone or along with other pathogenic organisms; and a tertiary stage, when saprophytic mouth organisms may invade the already diseased lung.

It was shown that the type of pulmonary complication is to a considerable extent dependent on the type of pathogenic pneumococcus or streptococcus present; that pneumococci of Types I, II and III were associated, as was to be expected, with pneumonias showing definite consolidation, as were also certain of the Group IV pneumococci; that others of the Group IV pneumococci and the haemolytic streptococci were associated with complications of the bronchopneumonic and bronchitic types.

The presence of complex infections in epidemics of this kind does not imply that the original bacterial cause at the beginning of the outbreak was not a single type of micro-organism; nor does proof that the important organismal varieties are always types foreign to normal mouths and throats—are in fact infections from without—imply that the real primary agent in such epidemics may not be a temporary susceptibility, individual or general, due to causes at present unknown.

FRACTURE OF THE FIRST RIB.

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THE following case of fracture of the first rib is interesting, both on account of its rarity and its clinical similarity to a cervical rib or exostosis.

A female, aged 17 years, complained of a swelling in the right side of the neck. The patient was unaware of its presence until it was noticed first by another girl. She had had "pins and needles" in the right hand and cramp in the arm for some time, and attributed this to an accident two months earlier, when she fell down a few stairs. She did not remember her attitude in falling, nor did she notice pain, tenderness, or bruising. The cramp was felt when the arm was hanging by the side, and was relieved by rubbing.

Examination showed a hard bony swelling, 1 in. above the middle of the right clavicle, fixed and irregular but somewhat rounded in outline, about the size of a walnut. It was continuous, both in front and behind, with the first rib, into which it merged. The space between the middle of the clavicle and the swelling was too narrow to allow the examining fingers to be inserted. There was a slight falling backwards of the anterior end of the clavicle. Between the swelling and the skin the pulsations of the subclavian artery, which was displaced upwards and outwards, could be seen and felt distinctly, giving also a thrill and bruit. The cords of the brachial plexus situated immediately behind the pulsating artery were similarly displaced, and could be rolled over the subjacent swelling with the examining fingers. The radial pulse was altered in volume and force when the arm hung by the side. Sensation and muscular power were unimpaired, and there was no wasting. Fracture was confirmed by *x*-ray examination.

The unique features of this case are the displacement and the clinical signs and symptoms.

Displacement in fracture of the first rib is quite rare. In the case recorded displacement was the main feature, attracting the notice of others to the swelling in the neck, and causing pressure signs and symptoms. In the literature there is an instance of slight displacement causing the normal curve of the rib to be slightly angular. If it is remembered that the first rib has superior and inferior surfaces with internal and external borders, it can be seen that angular displacement would more likely be upwards or downwards than outwards, which is the case in other ribs with internal and external surfaces and superior and inferior borders.

Complications usually draw attention to the fracture hitherto unnoticed, so that probably the frequency of complications has been exaggerated, uncomplicated fractures being no doubt overlooked. Abscesses above and below the clavicle have required incision and drainage. Empyema, lung abscesses, even rupture of the pleura and lung, followed by death, have occurred as complications. The case now reported is unique in its relation to the subclavian artery, which with the brachial plexus is displaced upwards and outwards.

Site of Fracture.—Fracture at the site of injury occurs by direct violence applied to the posterior and also to the anterior part of the first rib. These areas are protected by the posterior shoulder girdle muscles and the inner end of the clavicle respectively, so that great violence is needed to cause fracture. The costal cartilage and junction of the costal cartilage with the first rib have also been the site of fracture. Any part of the rib between its two extremities is subject to fracture, and the deformity, angulation upwards and outwards, would fairly suggest compression force applied from either end. This part of the rib is shielded from direct violence by overlying structures. It has been suggested that the clavicle might act as a powerful lever, fracturing the underlying rib, like the top lever of a nutcracker, trauma on the shoulder representing the power. This mechanism can only act very rarely, if at all, and in abnormal relations of clavicle to first rib, else fracture of the first rib would be a common occurrence, for injuries and falls on the shoulder are very frequent.

Symptoms and signs are usually so slight as to pass unnoticed, or are overshadowed by concomitant injuries. Indeed, the fracture has very often been discovered during the investigation of its complications. Still, in a few cases localized pain on breathing, or moving the shoulder girdle or neck, has been felt.

Union is the rule, as in all ribs, yet a case has been described of pseudarthrosis at the site of fracture. In the case here reported there is firm malunion.

A CASE OF MYOCLONIC ENCEPHALITIS LETHARGICA SIMULATING HYDROPHOBIA.

BY

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IN the discussion on epidemic encephalitis in 1918, at the Royal Society of Medicine, Dr. Crookshank pointed out that the old physicians used to describe "hydrophobia without the bite of a dog," and that this condition had also been reported in England in 1918. The following case was one in which hydrophobia was thought to be a possible diagnosis.

A. B., female, aged 25 years, up to the morning of November 11th, 1920, was in good health, and with the exception of three attacks of influenza had had good health for many years. On the evening of November 11th she did not feel well; on November 12th she gave up her usual occupation owing to increased feeling of illness. She was first seen by one of us (D. E. Morley) on November 13th, and appeared to be suffering from a mild influenzal attack with no special symptoms. When seen on the 14th she was distinctly excited and anxious about herself; she had vomited in the morning, and headache had become a more marked feature. On November 15th, when seen (by D. E. M.) she became, as she had been earlier in the day, maniacal. Sitting up in bed, she shouted that her mouth was paralysed and that she was going to die. The left side of the face was weak but there was no definite paralysis. On the 16th she was wildly delirious, the most marked feature being dread of trying to swallow, and the prolonged laryngeal spasm caused by the attempt to do so. The same ideas of paralysis and death still pervaded her delirium. The condition was such as one would expect to find in a case of hydrophobia, only there was no reasonable excuse for such a diagnosis.

On November 17th she had subsided into a semi-comatose condition and was seen in consultation (with S. E. Denyer). Encephalitis lethargica was diagnosed. The condition found (by S. E. D.) was as follows: Temperature 100°, pulse 88, good; limbs flaccid, no trismus, slight twitching of the facial muscles on the right side, pointing to irritation of the seventh cranial nerve. She also had occasional clonic movements of her arms. The knee-jerks were present, no Babinski, no ankle clonus, tendo Achillis jerks not obtainable, no Kernig's sign. On stroking the foot fairly hard, irregular twitching of the muscles of the outer side of the thigh took place. There had been no incontinence of urine or faeces until this day, when there was a slight incontinence of urine; the bladder was empty. Pupils react to light but are unequal, the left being slightly dilated. No nystagmus. She was in a lethargic state and did not answer questions or appear to be aware of anything that was going on. There was great difficulty in swallowing, owing to the marked laryngeal spasm. A fluid of purulent appearance was frequently regurgitated from the throat. There was subcutaneous emphysema at the root of the neck on the right side. *Tache cérébrale* was present. The abdominal superficial reflex was present. There was no squint or ocular paralysis, no cyanosis, no sweating, no rash, no retraction of the head or pain in moving the neck in any direction. She had been fed successfully with a nasal tube previously, but an attempt to repeat this set up a condition of spasm which made feeding impossible by this means. She was therefore given saline enemata containing sugar, and to these was added 40 grains of hexamine every eight hours.

This treatment was continued, and on November 19th 10 grains of hexamine was administered intravenously. On November 20th she was conscious, and a further 20 grains of hexamine was given intravenously. On November 21st she was much improved mentally, being conscious of her surroundings and able to speak sensibly, though her words were incompletely formed. Feeding now became possible by a stomach tube, though there was still considerable spasm until the tube was in position. Her general condition, however, became worse, and although the emphysema at the root of the neck which had been so marked on November 17th had completely gone, bronchopneumonia supervened and the illness terminated fatally on November 24th.

The temperature varied from 100° to 102°, with the exception of rises to 104° and 105° on the third and fourth days of the illness.

The indications seemed to point to hexamine being of value. The cause of death seemed to be the result of the rupture of one of the constrictor muscles of the pharynx, due to extreme spasm, causing subcutaneous emphysema, with resulting cellulitis and aspiration pneumonia.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CARDIAC MASSAGE IN RESUSCITATION.

PROFESSOR GUNN'S most interesting article on "Massage of the heart and resuscitation," in your issue of January 1st, 1921, leads me to think that it will be of interest to record a case which supplements his experimental findings by some clinical observations.

An adult female, suffering from carious teeth. General anaesthesia was induced with ethyl chloride, and three teeth were extracted without difficulty. Cessation of respiration and sudden pallor immediately ensued. Ether was injected subcutaneously and artificial respiration begun. As the pallor increased, the heart was auscultated and found to have stopped. Artificial respiration was persisted in for about three minutes from the time of cessation of respiration in the hope that the cardiac inhibition would prove a temporary one, but it was of no avail. The abdomen was then opened, and cardiac massage begun. With the other hand artificial respiration was maintained by simple compression of the chest. Pituitrin 1 c.cm. was given subcutaneously. Colour almost immediately returned to the face, showing the efficacy of the artificial circulation. After about five minutes' massage, feeble spontaneous heart beats were felt, and were supplemented at intervals by massage. About two minutes later several deep spontaneous respirations were made in rapid succession. This was at once followed by arrest of the heart and respiration also stopped again. Cardiac massage and artificial respiration were persisted in for forty-five minutes, during which time deep inspirations were made at intervals of about ten seconds—as in morphine poisoning. At first deep, they became shallower and more infrequent, and eventually ceased.

This case is of interest in the light of the theory which Professor Gunn has advanced. Professor Gunn suggests that certain cases of failure in resuscitation by cardiac massage and artificial respiration are due to vagus inhibition. In such a case the heart has commenced again to beat well, after massage; the paralysed central nervous system, including the respiratory and vagus centres, begins to recover; spontaneous respiration begins; then the vagus centre awakens, hyperexcitable after its paralysis, and cardiac inhibition results. From cardiac arrest due to this cause Professor Gunn states that he has been unable to resuscitate animals.

In the case described this sequence of events is closely followed. The heart was initially arrested by vagus inhibition, due to stimulation of the fifth cranial nerve. Cardiac massage and artificial respiration revived the brain. Spontaneous respirations began, immediately followed by cardiac arrest, presumably due to inhibition by the recovering vagus centre. If, as Professor Gunn recommends, atropine had been administered intravenously, it seems probable that this patient would have recovered.

Edinburgh. NORMAN M. DOTT, M.B., Ch.B.Edin.

A CASE OF DELAYED ARSENICAL POISONING.

THE length of time (three months) which elapsed from the taking of arsenic to the fatal result, the large quantity taken, and the nature of the symptoms in the slow poisoning of the nerve tissues, all make this case of interest from a medico-legal point of view, though the taking of the drug was purely accidental, and not the slightest suspicion of attempted suicide ever arose.

Mr. X., aged 68, proprietor of a grocery establishment, who carried on also an extensive pharmacy, had been under my care for some time, suffering from enfeebled action of the heart, but not sufficient to prevent him from following his usual business. At 8 p.m. on February 23rd, 1920, he took by mistake for a preparation of magnesia, which he was in the habit of taking for indigestion, a heaped teaspoonful of arsenic mixed with hot milk; the quantity when weighed equalled 180 gr. Half an hour later he ate a hearty supper of porridge and milk. At midnight he began to vomit, had diarrhoea, and complained of a burning sensation in his stomach. The diarrhoea and straining continued with increased violence until 3 a.m. When I arrived at 4 a.m. I found him cold, with thready rapid pulse. He was vomiting, and had watery diarrhoea with great tenesmus. Water was at once rejected; the temperature was subnormal, and the pulse 120. He complained most of cramps in his legs and intestines, and a burning feeling in the pit of the stomach, with vomiting and diarrhoea every few minutes. He was quite conscious, and wrote an account of how the accident occurred. I decided with Dr. D. C. Campbell, who had arrived also, that it would be useless to wash out the stomach now, but to relieve pain and restrain the diarrhoea and tenesmus we gave him an enema of a drachm of tincture of opium and one of starch. This relieved these symptoms and the cramps in the legs. He was given albumin water by the mouth during the rest of the night, and then milk and barley water. There was only one motion of the bowels, and this not until late in the evening. When next seen, about 10 a.m., the temperature was normal, and the pulse 100. He was very restless, and complained of fidgets in the legs but no cramps. The conjunctivae of both eyes were slightly congested. No urine was secreted; a rubber catheter was passed, but no urine was found in the bladder. He was then seen by Dr. H. McKisack, and diuretics were ordered, with mustard and linseed poultices to the loins in order to encourage the action of the kidneys and assist in the elimination of the poison. Magnesium sulphate was also given freely. This had the desired effect, and urine was freely passed. The patient was now able to be up and about, and soon was walking in his garden; eventually he even walked down to my house.

The first untoward symptom that showed itself was a feeling of pain in both arms and forearms which he compared to neuralgia, for which he was given phenacetin and aspirin, with massage. This increased to a feeling of numbness in the parts supplied by the radial nerves of both hands, so that he was unable to hold a cup or spoon firmly, but he was still able to walk. Dr. McKisack, who again saw him with me, suggested in addition to the potassium iodide which he was now taking, and the massage, that he should have a continuous current applied, and for this reason he was removed to a nursing home in Belfast on April 30th. He was then able to walk, but said his feet felt as if he were walking on wool. Very soon after he was brought there he was found to be ataxic in his gait; he was unable to stand upright if his eyes were closed, or to make an attempt to walk if his eyes were closed without falling. The knee-jerks gradually became lost and ankle clonus appeared. He became slowly but steadily worse, hypostatic pneumonia developed, and death took place on June 13th by slowly ascending paralysis. Up to the end arsenic could be found in the urine.

GEORGE ST. GEORGE, M.R.C.P.I., L.R.C.S.Edin.,
Surgeon, County Antrim Infirmary, Lisburn.

A TUMOUR OF THE NECK.

THE following case may be of interest, especially from a diagnostic point of view:

Mrs. W. was admitted to the Wakefield Hospital in March, 1920. For five years she had suffered from an enlarged tonsil (right). At intervals she had acute attacks accompanied by pain and increased difficulty in swallowing, which subsided after the discharge of pus. It was ascertained afterwards that the pus came, not from the tonsil, but from the ear. Recently the tonsil had become larger, and the swelling appeared under the lobule of the ear, and another in the submaxillary region.

On examination, there was a swelling about the size of a chestnut just below the lobule of the ear, which seemed to fluctuate. There was another similar swelling in the submaxillary region. The mouth could be opened easily, and the so-called enlarged tonsil was seen to project from between the pillars of the fauces and extend across the pharnyx, leaving only a small space on the left side for the passage of food. The mucous membrane covering it was of normal colour, and palpation of it caused no discomfort.

A curvilinear incision was made behind the angle of the jaw, revealing almost immediately a solid tumour which proved to be the size of a duck's egg, and of similar shape, except where an outgrowth, softer than the rest of the tumour, passed outwards towards the lobule of the ear. The tumour was shelled out with ease, save perhaps where various seekers after pus had pursued their vigorous

investigations. On the outer pole was the attenuated submaxillary gland, and on the inner a trophic tonsil. Microscopic examination of the tumour showed the presence of fibrous tissue, cartilage, muscle, fat, and some epithelial elements. Recovery was uneventful.

Wakefield. J. W. THOMSON.

Reports of Societies.

ADVANCING YEARS AND BALNEOTHERAPY.

SENESCENCE in general and from the balneotherapist's point of view was the subject of Dr. G. L. PARDINGTON'S presidential address delivered to the Section of Balneology and Climatology of the Royal Society of Medicine on January 27th. After a concise survey of the atrophic and degenerative changes which made their appearance with advancing years, he said that for the maintenance of physiological equilibrium and the prevention of functional failure, or its anticipation and the limitation of its effects, reliance must be placed on hygiene in the widest sense, including regulation of diet, methods of living, work, rest, and exercise. It was here that balneotherapy found one of its most effective uses. Balneotherapy he defined as the application to the body surface of thermal and mechanical stimuli by means of water, air, or rays of incandescent light; the effects of such stimuli varied with the temperature, duration of application, area involved, technique, and condition of the patient. The first four of these factors were under the physician's control, and the fifth called for his careful supervision.

The temperature of the skin, Dr. Pardington continued, averaged about 90° F., which point formed the zero of thermal stimulation. It might be that the effects of stimuli within the range from 78° to 98° differed specifically as well as thermally from those beyond either extreme. The duration of any balneotherapeutic procedure should vary inversely with the intensity of the thermo-stimulation, and this applied especially to the lower ranges of temperature. A few seconds would suffice for decidedly cold or hot applications, except in local measures such as douches, where mechanical effects were superadded. The duration of moderately hot or cold applications might be measured in minutes, while the neutral bath (95°) might be employed for half an hour for a general sedative effect. Generally speaking, those cutaneous areas which had the best vascular supply yielded the best response to cold applications. Precision in details of administration influenced very largely the attainment of the desired result. The bath chamber should be well ventilated and warmed to 75°. In measures involving percussion and vibration it was important that the force of water should be adequate—some 20 or 30 lb. to the square inch. A careful estimate should be made of the condition of the patient, more especially with reference to the cardio-vascular apparatus, the blood pressure, the possible existence of anaemia, and the state of lungs, kidneys, and excretory organs. Individual predisposition as well as age had to be considered.

Dr. Pardington then discussed indications and results. The effect of a cold general application was a contraction of the peripheral vessels of the skin and a general reduction in surface temperature. The effect on the peripheral terminations of the sensory nerves resulted in a powerful stimulation of the central nervous system. The respiratory centre was very largely stimulated, and the respirations after the initial shock were temporarily quickened. The pulse was also quickened and the blood pressure raised. Afterwards the reaction occurred, and the feeling of chilliness was succeeded by warmth and exhilaration. This was the expression of physiological resistance, and its complete attainment was the object to be aimed at in all general tonic measures. It was necessary to be alive to the possibility of untoward results, such as deficient reaction, indicated by pallor, coldness of skin and extremities, faintness, and giddiness, which called for hot drink and warm clothing; and excessive reaction, shown by over-excitation of the heart, throbbing headache, and profuse sweating, which might be met by a general cold application (from 80° to 65°). Such untoward reactions might be encountered immediately, but there were other manifestations more remote, such as excessive tissue change, indicated by loss of weight, strength, and appetite, and by dyspnoea, which was generally due to some overlooked asthmatic affection. Cold tonic measures were usually best for the disordered metabolism which was often the initial phase in the disturbed conditions observed in advancing years, but such applications must be carefully graduated. The needle bath was one of the most useful means of treatment, as it could be regulated in temperature and duration with the utmost nicety. Where there was any tendency to cardio-vascular change extremes of all kinds were to be specially avoided, and tentative procedure was called for. Phlegmatic persons tolerated very well douches under suitable pressure. The sedentary were benefited by sudoriparous measures as well as by cold tonic treatment. The painful and stiff joints due to senile changes were much benefited by heat packs followed by cold douches. Turkish and Russian baths, especially the latter, were unsuitable in advancing years, particularly in the case of those unaccustomed to them, and all the advantages of such measures could be got equally well by hot air or vapour cabinet baths, or, better still, electric light cabinet baths. Baths of indifferent temperature (95°) were of special importance in senescence, especially in conditions of nerve irritability and insomnia, provided that reaction was carefully guarded against.

Dr. Pardington said, in conclusion, that he had been brought into contact with many people well advanced in years, some of them quite old, who had impressed him by their unusual vitality. They were people who had availed themselves regularly of a balneological course of treatment. Their vigour and alertness both of body and mind might be attributed to a lifelong observance of all the physiological commandments, but he knew that in the case of some of them this was not so, and he had been forced to the conclusion that balneology explained to a large extent their high standard of health. It was the case of these valetudinarian veterans which had suggested the theme of his address.

TESTICULAR DISEASE FOLLOWING TRAUMA.

AT a meeting of the Medico-Chirurgical Society of Edinburgh on January 19th, Emeritus Professor F. M. CAIRD presiding, Mr. CHARLES W. CATHCART read a paper on epididymitis and orchitis from muscular strain, followed by tuberculosis of the epididymis. The problem was twofold: First, could a severe muscular strain of the abdominal wall set up acute epididymitis and orchitis; and secondly, could this acute inflammation excite subacute tuberculosis of the affected parts? The following case from his own experience was typical, and was both of surgical and medico-legal interest.

A young miner, aged 21, and previously in perfect health, strained himself in attempting to lift a heavy weight. At once there was sharp pain in the lower abdomen on the left side, and very soon a "gripping" pain in the left testicle, associated later with nausea. He then noticed himself that the scrotum was swollen and reddened, and this was confirmed by his doctor a few hours later. Some days later the left testicle was found to be swollen and tender, this subsiding in a few days. But two weeks later pain returned very severely, swelling increased, and after a month an abscess was incised, which was found to be due to a tuberculous epididymis (left).

Mr. Cathcart reviewed fourteen similar cases from the literature and from private records. In some of these there was passage of blood per urethram; but in most this was absent. The effects on testicle and epididymis varied—in some a transient swelling, in others subsequent atrophy or chronic inflammation. It seemed clear that a simple muscular strain could produce such injuries, and that they were analogous to the strains and ruptures of ligaments and muscles, and to the sudden hernias, of healthy people. As to the mechanism of production of the lesion there were two theories. Hilton's view was that there was a rupture of the vas deferens; while the view of Barthélemy and others was that torsion of the vas took place, and this could account for all the symptoms, including that of urethral bleeding. The speaker on the whole favoured the "torsion" theory in the majority of such cases. In Lapointe's 34 cases of torsion of the vas deferens there was no history of trauma or effort in 6; while in 19 there was some strong sudden contraction of the abdominal muscles. The variation in the symptoms as to rapidity of

onset, severity, and after-results was explained by the varying degrees of torsion, and by its duration or permanency. It did not seem unreasonable to suppose that a latent or new tuberculous process might be set up in the damaged epididymis. Mr. Cathcart summarized his views on the subject as follows: Acute orchitis and epididymitis might be caused by a severe abdominal strain, and in the absence of any previous infection—for example, gonococcal—of the urethra, and without any apparent abnormality of the testicle. This acute inflammation was, at least in some cases, the result of torsion of the cord induced by the strain and due to vigorous or irregular contraction of the cremaster muscle. In other cases the inflammation might be due to rupture of the vas deferens, with simultaneous injury to the vessels and nerves of the cord. The acute process might end in atrophy or chronic inflammation of the testicle or in local tuberculosis.

Emeritus Professor CAIRD quoted several cases of this kind where operation had been done; in all torsion of the cord was present. The complication of tuberculosis was analogous to tubercle following a sprained ankle.

Vaccine Therapy in General Practice.

Dr. R. ROBERTSON subsequently read a paper detailing the use of vaccines in various acute and chronic bacterial infections. In boils, and most septic infections of the skin, the disease was cured after three or four injections if the correct technique was practised, and stock vaccines seemed to do as well as autogenous. Occasional failures here were due to the overlooking of some other infection. Common colds, caused by *Micrococcus catarrhalis* with associated staphylococci and streptococci, and frequently also *Bacillus influenzae*, were very amenable to vaccine treatment. With such a mixed vaccine, if the site of injection became painful in twenty-four to forty-eight hours, this made it very probable that *M. catarrhalis* was the cause of the condition. Sciatica and neuritis in 90 per cent. of cases were of rheumatic origin, and usually yielded quickly to a streptococcal vaccine; as also did many cases of tonsillitis. Chronic pharyngeal catarrh did well with mixed streptococcal and staphylococcal vaccines, but required about twelve injections. Colds in the head were sometimes obstinate, and in such cases further examination might show a local diseased condition requiring surgical treatment. In otitis media and frontal sinusitis complicating influenza, good results could be got with a stock catarrh vaccine, beginning with small doses; but he advised autogenous vaccines in these conditions. For erysipelas, he had used mixed staphylococcal-streptococcal vaccine with very good results, the condition clearing up in one week as a rule. As to pneumonia, he warmly advocated the use of vaccine; he believed that, if used at the outset, there was complete abortion of the attack in 25 per cent. of cases. He usually gave 20 to 25 million for the first dose, but this depended on several factors—duration of attack, severity of symptoms, etc. Sometimes the effect was marvellous, and lantern slides were shown demonstrating the changes in temperature, pulse, and respiration. As to tuberculin treatment, it required to be continued for two or three years. Cases of intestinal dyspepsia, especially acute cases with diarrhoea and flatulent distension, were suitable for vaccine treatment. Neurasthenia, where there was so often severe chronic intestinal dyspepsia, also came under this category.

Dr. R. A. FLEMING, as the result of his experience in the great influenza epidemics of 1918 and 1919, was sceptical as to the value of vaccine in pneumonia. An autogenous vaccine might do better, but the delay in its preparation was a handicap. He had had good results with Béraneck's tuberculin. In bronchiectasis a carefully prepared autogenous vaccine sometimes worked wonders.

Dr. CHALMERS WATSON said there was a psychic factor in the use of all vaccines which might account for part of their benefit. Mr. WILKIE agreed as to the value of vaccines in preventive medicine and certain chronic diseases, but he required a fuller demonstration to be convinced of their value in some of the acute diseases. Mr. J. S. FRASER said he had used vaccines in a sporting spirit, and he was cautious in prophesying results. They had not been much help to him in accessory sinus affections where the drainage was the important thing. Sometimes, indeed, there was a striking success; but just as often the results were very disappointing.

ANAESTHESIA AND POST-OPERATIVE MORBIDITY.

AT a meeting of the Scottish Society of Anaesthetists, held on December 4th, 1920, at the North British Hotel, Edinburgh, Dr. TORRANCE THOMSON read his inaugural presidential address on the subject of "Post-operative morbidity in relation to general anaesthesia." Although many conditions falling into the category named were not directly under the control of the anaesthetist, it was essential that he should be fully acquainted with the literature and current theories of the subject, so that he might play his part in securing improved results. Recent work was reviewed under the three headings: (1) Nausea and vomiting; (2) chest complications; (3) shock.

In regard to (1), recent work did point to some connexion between diminution of alkali reserve and after-vomiting, but that was not the whole problem. The use, when possible, of nitrous oxide-oxygen, smooth administration of the least possible quantity of anaesthetic, and gentleness of manipulation on the part of the surgeon, were all factors. On the whole, Dr. Thomson favoured the preliminary use both of narcotics in moderate doses and of alkalis. Under (2), he thought that skilful administration was of more importance than the mere choice of anaesthetic. In cases of so-called ether bronchitis or pneumonia he thought the patient usually had a pre-existing catarrh, a point too little recognized by surgeons. Prevention of skin-chilling during operation and during transit back to bed also demanded careful attention. The warming of anaesthetic vapours might diminish local irritation of air passages, but its effects on after-results were not proved so far as prevention of respiratory complications was concerned. Under heading (3) the work and literature of the war had shown some connexion between acidosis, falling blood pressure, and clinical shock. It was, however, in cases showing marked diminution before operation that the connexion seemed closest. From the anaesthetist's point of view such cases should be given gas-oxygen. The practical difficulties in this were the lack of proper plant in many hospitals, the cost and trouble of transporting the apparatus in private work, which would involve raising the standard of remuneration for anaesthetic work.

Summing up the whole question, Dr. Thomson thought that the essentials in the prevention of complications under all the headings were: (*a*) That anaesthesia should never be pushed to a degree greater than was absolutely essential, and that in this respect the surgeon should learn not to be too exacting; (*b*) that Crile's pre-operative anti-emotional technique should be carried out as far as possible; (*c*) that excess in fasting and purgation should be avoided; (*d*) that alkalis and a moderate dose of narcotic should be given before operation.

A general discussion followed. Dr. H. P. FAIRLIE referred in particular to post-anaesthetic vomiting:

He was glad to hear a warning regarding the excessive starvation and purgation so often prescribed before the administration of an anaesthetic; he agreed that they tended rather to encourage than to prevent post-anaesthetic vomiting. He mentioned a measure advocated by the late Dr. Renton—namely, the placing of the patient in the sitting posture after operation. Whenever feasible, it rendered vomiting less likely to occur, and less objectionable when it did occur. The use of preliminary atropine helped in the prevention of vomiting and shock, and of post-anaesthetic bronchitis, by diminishing the secretions in the mouth which were so liable to be swallowed and inhaled, acting then as an irritant. With reference to the employment of gas and oxygen, he found, with considerable experience of this anaesthetic, that it was open to most of the criticisms which had been levelled at it by various speakers at the meeting—for example, it was expensive, it required a bulky outfit, and it required, especially for abdominal operations, the addition of ether. But he agreed with Dr. Thomson that in many operations it was a most valuable anaesthetic. It was safe, it diminished shock, it left the patient in a much happier state than ether or chloroform, the sickness following anaesthesia being much less frequent and less severe after gas and oxygen than after either of the other anaesthetics.

The following cases of interest were recorded:—

Dr. TORRANCE THOMSON: A 10-days-old child anaesthetized by chloroform—open ether for an operation of a few minutes only. No incident of note occurred during the operation, but the child died suddenly ten days later, and *post mortem* very marked status lymphaticus was found.

Dr. LAMB mentioned a case of secondary syncope after breath-holding during an induction by chloroform of a woman. The breathing began again after the use of artificial respiration, and persisted for forty minutes although there was no pulse, and with the exception of the chest movement the patient was apparently dead. Dr. ROSS said he had seen something of the same in a dog, but never in a human being, nor had he seen the condition persist for more than a minute or two.

Dr. JOHNSTON recorded the case of a woman who had a Pott's

fracture reduced under nitrous oxide, and who died ten minutes after recovery from the anaesthetic. On *post-mortem* examination there was thrombosis in the femoral artery and vein of the affected limb, and an embolus in the pulmonary artery.

THE annual meeting of the North of England Obstetrical and Gynaecological Society was held at Manchester on January 21st. Mr. CARLTON OLDFIELD (Leeds) was elected President for the ensuing year. Dr. BRIGGS (Liverpool) showed a specimen of tuberculous salpingitis removed from a patient thirteen years previously; she was now in perfect health. He was of opinion that inflamed tubes were more commonly tuberculous than was usually supposed. Dr. W. W. KING (Sheffield) showed a specimen of hydrometra removed from a nulliparous patient. The uterus was the size of a four months pregnancy and the obstruction to the outlet of uterine secretions was caused by a small cyst arising in the mucosa of the cervical canal. Dr. CLIFFORD (Manchester) showed a large ovarian tumour removed from a girl aged 12 years. The growth was a sarcoma of rapid growth with extensive areas of necrosis. Dr. SHAW (Manchester) described a case where he had removed a large myxomatous tumour of the left ovary, the other ovary being at the time apparently quite healthy. Twelve months later the patient returned with a large abdominal tumour which, at operation, proved to be a similar growth of the right ovary. Dr. LACEY (Manchester) read a paper on induction of labour for contracted pelvis, based on a series of 75 cases, in which the conjugata vera measured not less than 3½ in. in flat nor 3¾ in. in generally contracted pelves. The method adopted was that of Krause, but this was supplemented in 29 instances by the introduction of a Champetier de Ribes's bag. The maternal mortality was, of course, *nil*, the morbidity 1.3 per cent.; 84 per cent. of the children were born alive, and of these, 78.6 were discharged well on or about the twelfth day.

Reviews.

GROWTH AND SHEDDING OF ANTLERS.

IN his beautifully illustrated monograph on *The Growth and Shedding of the Antler of the Deer*, which describes in detail the histological phenomena and their relation to the growth of bone, Sir WILLIAM MACEWEN,[1] Regius Professor of Surgery in the University of Glasgow, presents us with a full account of the results of a prolonged inquiry. He was no doubt attracted to this subject by his well known interest in the development of bone, and further light is thrown on this problem. The quantity of osseous matter secreted annually to form the antlers of the larger deer is enormous, and was stated by the late Sir William Flower to have been in certain instances more than that of all the bones of the skeleton put together. As the growth of the antler proceeds from a single comparatively small centre of ossification in the frontal bone, the cellular proliferation is in excess of that seen not only in any normal process, but also in the most rapidly growing tumours. The growth of the antler is in some respects analogous to that of bone which follows amputation through the arm or thigh of a child, ultimately forming a conical stump as a result of continuous proliferation at the proximal epiphysis; but the antler has a tip of actively proliferating cartilage, and is covered by the velvet—a remarkably complete reproduction of the skin with its glands, nerves, vessels, hair follicles, and appendages.

The evolution of the osteoblast is illustrated by most successful photomicrographs, and the syncytium, from which bone and cartilage develop, is shown to be alike in the antler of the deer, in bone grown experimentally in glass tubes, in dog's bone, in human growth, and in the regeneration of bone, such as in repair after osteomyelitis and in the healing of fractures. The separation of the antler depends primarily on the withdrawal of its blood supply and is an aseptic process. The concluding chapter is devoted to the phenomenon of nuclear budding observed in osteoblasts that have reached or are approaching their mature form; since it has been seen in deer's antlers it has been detected near the growing epiphyses in the dog and in man, as well as in morbid processes attended by rapid growth, such as sarcoma. The check to the growth of the antler produced by castration probably involves among other changes, cessation of nuclear budding.

When regarded from the evolutionary point of view the stag's antlers are a great puzzle. It is not easy to see that they serve any purpose which, even if they grew once for all, would be commensurate to the expenditure of energy and material; as the antlers are shed annually the puzzle becomes greater. So far as we are aware there is nothing comparable in nature. We have dwelt upon the histological side of Sir William Macewen's book, but it will interest all those concerned in natural history, whether as naturalists or sportsmen.

[1] *The Growth and Shedding of the Antler of the Deer.* By Sir William Macewen, F.R.S. Glasgow: MacLehose, Jackson and Co. 1920. (Demy 8vo, pp. 126; 103 figures, 10s. 6d. net.)

A FRENCH SYSTEM OF MEDICINE.

A NEW treatise on medicine,[2] produced under the distinguished editorship of Professors ROGER, WIDAL, and TEISSIER, promises to constitute a landmark in the annals of the medical literature not only of France, but of the world in general. The list of collaborators whose services have been secured to contribute to this great system of medicine includes all those living Frenchmen whose work and opinions we hold in highest esteem.

In 1891 the classical system of Charcot, Bouchard, and Brissard appeared, and presented a wonderful collection of monographs and original memoirs on the whole domain of medicine. About 1912 Bouchard considered the time had come for a new edition or rather a new treatise. He turned therefore to his old pupils Roger, Widal, and Teissier, to undertake the direction of the new work, which was to embody as far as possible the whole contributions of modern France to medical progress. It is difficult to realize fully how extensive and important those contributions have been during recent years, but on reading through the list of contributors to the new treatise we do at least recognize that nearly all the names sound as familiar and famous in England as in their own country.

The treatise is to consist of twenty-one parts or fasciculi, each of which will be almost a complete book in itself on some branch of medicine.

The first fasciculus is one of three, or, more correctly, of five, which are to deal with infectious diseases and diseases due to parasites. Roger introduces the subject with a section on infection in a general sense. He classifies and describes the various infective agents, giving brief accounts of the biological characters and their effects in man and in animals. We say particularly "and in animals" because it is evident that France enjoys a peculiar heritage from the work of Pasteur—namely, that the study of comparative medicine is regarded as part and parcel of the study of disease in man; whereby the health of man and animals alike will, we believe, profit incalculably. Other subjects dealt with in the first fasciculus are septicaemias by E. Sacquépée, streptococcal infections by Roger, pneumococcal infections and pneumonia by Menetrier and Stévenin, and infections from staphylococcus, tetragena, enterococcus, Pfeiffer's bacillus, and Friedländer's bacillus, as well as psittacosis and proteus infections by H. Macaigne. A. Veillon writes on putrid and gangrenous infections, Dopter on the meningococcus, and Hudelo on gonococcal infections.

This book is particularly welcome because it sets once and for all an example of the way to combine in a single description the pathologist's and the clinician's view of a disease. This is admirably illustrated in Dopter's account of meningococcal infections. French medicine is to be envied for this capacity of either making physicians pathologists or keeping pathologists still physicians. No small part of the credit for this is due to Pasteur and to the Pasteur Institute, which discovered the secret of attracting such men as Metchnikoff, Duclaux, Roux, and Calmette.

This we believe to be the influence which is inspiring medicine in France at the present day and giving it its undoubted eminence. It would be hard to equal, from a the world beside, a list of contemporary pioneers in me cine like theirs, which includes Richet and Portier with their work on anaphylaxis, Bordet and Gengou on agglutination, Widal on cytodiagnosis, Pierre Marie, who first described acromegaly and has added much else to our knowledge of nervous diseases; Babinski, Chauffard,

[2] *Nouveau Traité de Médecine.* Fascicule 1, Maladies Infectieuses. Editors: Professors Roger, Widal, and Teissier. Paris: Masson et Cie. 1920. (Sup. roy. 8vo, pp. 499; illustrated. Fr.35 net.)

Marcel Labbé—when one begins one scarcely knows where to stop, name after name comes back to the memory. The *Nouveau Traité de Médecine* is intended to give us the whole wealth of learning of which contemporary France is capable. From the first volume we have gained such a foretaste as gives us the keenest appetite for the rest. The publishers, Masson of Paris, have spared neither expense, pains, nor art to produce a work which, by its typography and its illustrations, may be held worthy of its subject matter.

PREVENTION OF DISEASE IN THE TROPICS.

DR. ANDREW BALFOUR'S volume, *War Against Tropical Disease*,[3] contains seven papers, all of which, with one exception, have previously appeared in periodical publications. Dr. Balfour is well known as a pioneer worker in tropical medicine and hygiene, and the object he has had in compiling this volume may be gathered from the fact that he has called his papers "sermons," because, he says, "they are intended to spread that gospel of hygiene which is so important both at home and abroad."

All successful efforts at evangelization must be clothed in plain language, and, in this sense, the author has succeeded in being an evangelist. True to this mission, he insists on the fundamental truths of hygiene rather than entering upon a discussion of modern doctrine. To say, therefore, that the book contains little that is not already known to the expert, is to pay a compliment. Those who read the book will appreciate this, and from the many apt references and quotations will feel that Dr. Balfour's gain to the profession is an obvious loss to "the cloth."

The papers deal with sanitation and preventive medicine in various parts of the tropics, both in the old and the new worlds, as well during the war as in peace time. Stress is rightly paid to the importance of insects as carriers of disease, and in the paper on the "Medical Entomology of Salonica" a useful account is given of the anatomy and distinguishing features of the various kinds of insects concerned. In giving an account of the "Preventive Inoculation against Typhoid and Cholera" the difficult problem of immunity is dealt with in a popular and lucid manner.

"The Palm from a Sanitary Standpoint" has been specially written for this volume and has not appeared in print before. The effect of palms on mentality, their domestic and economic uses, their employment as breeding places by mosquitos and other insects, are among the subjects dealt with and give interesting reading.

The book should prove of considerable value to anyone, medical or lay, proceeding to or living in the tropics, and even those whose life is spent at home will find much to interest them and help the spread of the gospel of hygiene at home as well as abroad. The book is well produced and is illustrated with many admirable photographs.

THE INVOLUNTARY NERVOUS SYSTEM.

IN this little book on the sympathetic and associated systems, to which Professor PIERRE MARIE contributes an introduction, M. GUILLAUME,[4] who is already known to British readers by his studies on the neurological injuries and diseases of war, has produced a short account of the involuntary nervous system, dealing with its anatomy, physiology, and pathology, as well as with its clinical aspects. The nomenclature of the subject is confused, and a general agreement about it is urgently needed. British readers, following Gaskell, would prefer the term "Involuntary Nervous System," dividing this into sympathetic proper and parasympathetic. A brief introduction is followed by chapters on the morphology, anatomy, and physiology; they are concise and well illustrated by simple and clear figures in the text. The anatomical and physiological connexions of the parasympathetic system and the cranial nerves are well described. The clinical pictures produced by injury or disease are given in considerable detail. Perhaps the author is a little too dogmatic in some of his statements here, and he might have qualified his conclusions somewhat—for example, as to the effect of lesions of the cervical sympathetic. A useful chapter is one on the action of drugs upon the involuntary nervous system.

The vexed subjects of vagotonia and sympathicotonia receive full consideration in later chapters, where the views of Eppinger, Hess, and others are discussed. The author prefers the term *neurotonia* to *vagotonia*, believing that this picture is dependent on increased action of the sympathetic proper as well as of the parasympathetic system. Referred pains and the various viscero-motor and sensory reflexes form the subject of another chapter.

The style is easy and the book is pleasant to read; the author may be congratulated on having compressed so much information into so small a space without sacrificing the clinical interests of the subject. We do not find any new material, but the book as a whole constitutes a good review of our present knowledge of this difficult subject.

SYPHILIS IN THE TROPICS.

THOSE who are accustomed to see eruptions on the skin of Europeans are often puzzled when confronted with similar conditions in dark-skinned races. The book on *Syphilis, with Special Reference to the Tropics*,[5] by Mr. K. K. CHATTERJI, F.R.C.S.I., will help to lessen this difficulty in respect to the lesions of syphilis, as his material is largely drawn from the peoples of India. Chapter XI deals specifically with the tropical aspects of this disease; we wish it were longer. It is important, for example, to know that 96 per cent. of undiagnosed tropical ulcers give a positive Wassermann reaction.

The author has a high opinion of the therapeutic properties of margosa oil, obtained from the margosa or nim tree which abounds in all parts of India; from early times its healing powers have had a high reputation. The mode of preparation of margosic acid and its salts was described in the *Indian Journal of Medical Research*, April, 1918, p. 656. The drug is given by intravenous or intramuscular injection, and arsenic, mercury, and other salts are used. As further investigations are in progress it would be premature from the information in our possession to express any opinion as to the value of the drug.

The book is evidently the outcome of much care and labour, and a good deal of technical information has been incorporated in it. Some of the illustrations are lacking in clearness, and at times fail to convey a precise idea of the eruptions they represent, but no doubt this defect may be attributed to the difficulties of the present time, and will be corrected in future editions. There is an excellent bibliography of recent work, and the indexing has been done in an admirable manner. We believe the book will prove useful to those for whom it is intended—namely, to practitioners in the tropics.

TWO MEDICAL POETS.

DR. DAVID RORIE of Cults is well known as a poet of the vernacular to his Aberdeenshire friends, and doubtless many who served with him in the war, where he was A.D.M.S. of the 51st Highland Division, receiving the D.S.O., and being named Chevalier de la Légion d'Honneur, made the same discovery.

> When the sharpest flint made the deepest dint,
> An' the strongest worked his will,
> He drew his tune frae the burnie's croon
> An' the whistlin' win' o' the hill.

Like "the man o' the cave," Dr. David Rorie draws his inspiration from "hameowre" (homely) themes. The poems are the musings of a country doctor. His Doric has the sturdy lilt of Aberdeenshire, though here and there a note of Fife is heard. He who loves the Doric and a laugh should read *The Auld Doctor*.[6] The themes are typical, and the humour sure and human. Two of the poems appeared in *The British Students' Song Book*, "The Lum Hat wantin' the Croon," and "The Pawky

[3] *War Against Tropical Disease.* Being Seven Sanitary Sermons addressed to all interested in Tropical Hygiene and Administration. By Andrew Balfour, C.B., C.M.G., M.D., etc. Published for the Wellcome Bureau of Scientific Research by Messrs Baillière, Tindall, and Cox. 1920. (Cr. 8vo, pp. 180; 2 graphs. 12s. 6d. net.)

[4] *Le Sympathique et les Systèmes Associés.* By A. C. Guillaume. Preface by Professor Pierre Marie. Paris: Masson et Cie. 1920. (Cr. 8vo, pp. 150; 21 figures. Fr. 6.50 net.)

[5] *Syphilis in General Practice; with Special Reference to the Tropics.* By K. K. Chatterji, F.R.C.S.I. With an introduction by W. D. Sutherland, C.I.E., M.D., I.M.S. Calcutta and London: Butterworth and Co. (Demy 8vo, pp. xx+382; 56 plates. Rs.15 net.)

[6] *The Auld Doctor, and other Poems and Songs in Scots.* By David Rorie, M.D. London: Constable and Co., Ltd. 1920. (Demy 8vo, pp. 61. 3s. 6d. net.)

Duke." As an expression of the concrete, nothing can be better than—

The burn was big wi' spate,
An' there cam' tum'lin' doon
Tapsalteerie the half o' a gate,
Wi' an auld fish-hake an' a great muckle skate,
An' a lum hat wantin' the croon!

"The Pawky Duke," like the origin of Rorie's ballad of "Macfadden and Macfee," shows the pawky author with his tongue in his cheek:

An' if he met a Sassenach,
A-tour in Caledonia,
He gart him lilt in a cotton kilt
Till he took an acute pneumonia!
Hech mon! The pawky duke!
An' a Sassenach wi' pneumonia!
He lat him feel that the Land o' the Leal
'S nae far frae Caledonia!

Every poem tells its story, from the complaining wife that

had some unco queer mishaps,
Wi' nervish wind and clean collapse,
An' naethin' does her guid but draps—
Guid draps o' barley-bree, O!

to the obese Mistress Mucklewame, diagnosed by a "speeshalist" as suffering from "ang-bang-pang." The longest poem and the most amusing is "Tam and the Leeches," in which medical humour is given full scope and the druggist shop is depicted with the eye of a Hogarth. In its general plan "Tam and the Leeches" is reminiscent of "Tam o' Shanter."

Dr. C. J. WHITBY belongs to an altogether different school. For him life is full of seriousness and his mind and ear are sensitive to every modern movement. He has collected poems written at various dates, and for the most part published in earlier volumes or periodicals, into a book entitled *The Rising Tide*.[7] It consists of three parts, the first comprising poems written during the war or the years immediately preceding it, the second containing miscellaneous poems of earlier date, and the third two episodes from an unfinished epic, "The Deeds of King Olaf." The poem which gives its name to the volume, like several others in the first part, is in irregular unrhymed verse. Dr. Whitby, in a foreword, says that it is "strange that the universally significant, the pre-eminently poetic topic of childbirth should so generally have been overlooked or neglected." Though the realism of the writing is strong it is free from offence, and the poem may be compared, not to Dr. Whitby's disadvantage, with Zola's famous prose description. Among the earlier poems we find some agreeably turned verses entitled "On Leaving Limpley Stoke." Among the recent poems in more regular measure we would give high place to "Salutation," addressed to the first Canadian Contingent. From it we may quote the concluding stanza:

Canada, Canada!
Transient are the losses and the pains
But the splendour of the deed remains.

Generations yet unborn shall tell
How the brave Canadians fought and fell.

Pride with grief contends in me; for one
Called me father. Sleep'st thou well, my son?

NOTES ON BOOKS.

THE fortieth volume of the *Transactions of the Edinburgh Obstetrical Society*[8] embraces the proceedings of the society during the session 1919–20. The meetings were suspended during the war, and this is the first volume that has appeared since the session 1913–14. The contents include Sir Halliday Croom's valedictory presidential address, and papers by Dr. Lamond Lackie on artificial rotation of the head in persistent occipito-posterior positions; by Dr. Francis Browne on the histology of hydatidiform mole in its relation to prognosis; by Dr. Berry Hart on persistence of puerperal septicaemia since the end of pre-antiseptic times; by Dr. Robert Robertson on vaccine therapy in gynaecology and obstetrics; by Dr. J. W. Ballantyne and Dr. F. J. Browne on the colour scheme in pregnancy; by Professor Jardine and Dr. A. M. Kennedy on suppression of urine in pregnancy and the puerperium; and by Dr. Eardley Holland on cranial stress in the foetus during labour. The volume is well printed and well illustrated.

India has contributed many useful articles to the materia medica, but in addition to those that have found their way into the *Pharmacopoeia*, there are many drugs sold in Indian bazaars and used by native *vaids*, *Kavirajs*, and *hakeems* which are very sparingly employed by European doctors or stocked in Indian hospitals and dispensaries. Books have been written on indigenous Indian drugs by Webb, Kauye Lall Dey, Moodeen Sherrif, and others, but it is doubtful whether they have succeeded in introducing these drugs into practice to any considerable extent. Lieut.-Colonel G. T. BIRDWOOD, of the Indian Medical Service, has written a book[9] the purpose of which is to commend and facilitate their use, more particularly in district and mission dispensaries. The book sets forth (1) a list of bazaar medicines according to their action as alteratives, anthelmintics, etc.; (2) a description of these, indicating alphabetically their source, action and method of use; and (3) an alphabetical list of diseases in the treatment of which various bazaar drugs may be usefully employed. Over two hundred prescriptions are given suggesting the best methods of their administration. As a practical guide to the use of these medicaments this handy volume leaves little to be desired. The book is well printed and bound, interleaved for notes, and carefully indexed. It is to be hoped that it will not only help to commend indigenous medicines to the notice of Indian medical men, but will lead to research into their therapeutical value.

CALENDARS.

The *Calendar of the National University of Ireland*[10] gives complete information about that university and its three constituent colleges—University College, Dublin; University College, Cork; University College, Galway—and includes extracts from the regulations for courses in the Faculty of Medicine.

The current *Calendar of University College, University of London*[11] forms a comprehensive guide book to the courses, examinations, scholarships, and so forth in the various faculties; it is prefaced by the historical outline written by the late Dr. Carey Foster.

A much smaller volume, but one that has a certain general interest in view of the forthcoming Annual Meeting at Newcastle, is the *Calendar of the University of Durham College of Medicine*.[12] Founded in 1832 as the Newcastle-upon-Tyne School of Medicine and Surgery, this medical school became associated twenty years later with the University of Durham, and when, in 1870, this connexion was knit closer, it received its present name.

[7] *The Rising Tide, and Other Poems.* By Charles Whitby, B.A., M.D Cantab. London: Elkin Mathews. 1920. (Demy 8vo, pp. 112. Price 5s. net.)

[8] 1920. Edinburgh: Oliver and Boyd.

[9] *Practical Bazaar Medicines.* By G. T. Birdwood, M.A., M.D. Cantab., Lieutenant-Colonel I.M.S., Civil Surgeon, Lucknow. Calcutta and Simla: Thacker, Spink, and Co. 1920. (Fcap. 8vo. pp. 196. Rs. 3.8 as.)

[10] Dublin: Printed for the National University by Alex. Thom and Co., Ltd. 1920.

[11] London: Taylor and Francis. 1920.

[12] Newcastle-upon-Tyne: Andrew Reid and Co., Ltd. 1920.

APPLIANCES AND PREPARATIONS.

A Device to Assist in the Introduction of a Pelvic Drain.

SIR W. I. DE C. WHEELER, Vice-President, Royal College of Surgeons, Ireland, writes: The thimble illustrated is of great assistance in making a suprapubic opening for drainage in cases of septic peritonitis. The primary incision, when the case is one of perforation of the stomach, duodenum, or appendix, is usually at a distance from the pubic region. A pelvic drain in most cases is desirable. At the end of the operation, before the primary wound is closed, the finger guarded with the thimble is introduced into the abdomen and seeks the interval between the recti muscles just above the pubes. At this point the space between the muscles is well marked. With the thimble as a guide a stab wound is rapidly made, dividing all the tissues down to the peritoneum. The latter is pushed forward and is opened by a nick of a sharp-pointed knife between the bars carrying the round knob. A drainage tube (Keith's glass tube for preference) is fitted to the top of the thimble and is guided with great ease to the bottom of Douglas's pouch. The device saves time and overcomes the real difficulty of opening the peritoneum through a small incision. If the unguarded finger is used as a guide, the peritoneum stretches itself over the rubber glove and it is troublesome to separate one from the other. Surgeons must avoid cutting too boldly on an unguarded finger in the presence of septic peritonitis.

THE VOLUNTARY PRINCIPLE IN LONDON.

A MEETING of the President and General Council of King Edward's Hospital Fund for London on January 26th received a report from the Executive Committee, which had been instructed to consider what principles of policy should be recommended to the Government for the preservation of the voluntary system of hospital management and control. The general recommendations of the Executive Committee were adopted as follows:

1. That the voluntary system of hospital management and control should be preserved as being the most efficient method of providing at the least cost the best medical and surgical treatment combined with advance in medical knowledge and practice;
2. That a substantial portion at least of the cost of the hospitals should be met by voluntary contributions;
3. That the present receipts from voluntary contributions are not adequate to meet the present cost of the London voluntary hospitals, to say nothing of the discharge of debts or the provision of necessary extensions;
4. That any method of increasing income should be such as not to stop voluntary contributions or do away with voluntary management;
5. That any policy or absence of policy which stopped voluntary contributions and did away with voluntary management would bring upon the public funds not only the cost of the hospitals but also additional cost of paid management and of general supervision by some central public department.

So far as could be ascertained, so soon after the conclusion of the year, the total expenditure of the London hospitals in 1920 was £2,841,000; this was £493,000 more than in 1919. The income from normal sources, including the ordinary grant from the King's Fund, was, in 1920, £2,447,000, leaving a deficit of £394,000; by an emergency grant of a quarter of a million made by the King's Fund on July 5th this deficit was reduced to £144,000. The aggregate debt of London hospitals, after deducting £200,000 given last December by the National Relief Fund towards the reduction of past deficiencies, was £544,000 (£138,000 less than in the previous year). Besides the amount required to meet current expenses and to discharge existing debts the hospitals in London also need a large sum to carry out and maintain various necessary improvements and extensions. Among these extensions is provision for approximately 1,500 additional beds.

It is considered that were the uncertainties as to the future of voluntary hospitals removed appeals for contributions would be more successful, but even so it would be necessary to supplement them by some other source of revenue. The possible methods, as to which experience is being accumulated, and of which exploration should be encouraged, include:

(*a*) Various forms of contributions from patients in consideration of treatment received;

(*b*) Various forms of regular contributions from prospective patients as a kind of quasi-insurance whereby a patient who has directly or indirectly been a regular subscriber should be regarded as having partly made a patient's payment in advance. Experiments in this direction might be encouraged.

(*c*) Payment by Government or other public authorities in respect of the treatment of any classes of patients for whom those authorities have taken responsibility.

The opinion is expressed "that, while direct grants from the State in consideration of their general work might endanger voluntary contributions and voluntary management, some form of assistance based on the amount received for the benefit of hospitals from voluntary sources, or some concession by way of abatement of income tax or death duties, proportioned to gifts, might prove practicable, and might serve to elicit a larger revenue than is now thus obtained."

It is pointed out that for many years past many hospitals have in fact been receiving payment from public authorities; besides naval and military patients treated during the war, payments have been received for tuberculous patients, venereal cases, war pensioners, maternity cases, school children, and others; the payment has usually been a grant-in-aid bearing some relation to the amount of work done, but not covering the whole cost. It is considered that the method has proved advantageous both to the voluntary hospitals and the public authorities. The Council of the Fund proposes to obtain the view of the individual hospitals in London and also of the British Hospitals Association on the question of payment in respect of the great volume of gratuitous work which the voluntary hospitals do for patients insured under the National Insurance Act.

While the need for increased income is great, it is held that attention should continue to be paid to the possibility of further economies in expenditure by strengthening the internal financial control of each hospital, by encouraging co-operation among the hospitals, and by securing that the best possible use is made of the various forms of voluntary accommodation and equipment. Upon this last point the report says:

It is clear that as the demand for hospital treatment grows, the voluntary hospital system must either expand so as to meet the whole of that demand itself; or submit to the establishment of other agencies to compete with it in the attempt to meet the whole of the need; or confine itself to meeting the whole of the increase in the particular kind of demand which it may be best fitted to meet. Different decisions between these three courses may be appropriate to different localities or to different kinds of hospital. But correct decisions there must be, if the voluntary hospital is to keep its proper place in the growing medical service of the country.

The voluntary hospitals of London have already prepared, with the sanction and encouragement of the King's Fund, plans for extensions to meet the most urgent need for further accommodation of the kind they are most fitted to supply. The report of the Distribution Committee in July last, at the time of the special distribution of surplus Red Cross funds in aid of schemes of extension and improvement, gave statistics of approximately 1,500 additional beds, which the Fund had already sanctioned, after paying due regard to the class of hospital and to the geographical distribution of the schemes in relation to the demand, and subject to the Hospital Committee being satisfied as to the prospect of funds for building and maintenance. This last condition assumes, of course, some solution of the general financial problem.

On the question whether the voluntary hospitals should attempt to cover the whole ground, and oppose all other methods of providing hospital accommodation, no recommendation is made, but the report contains the following observations:

We would remark that the present sphere of the voluntary hospital is the result of a process of specialization by which various sections of the increasing demand for hospital treatment have been taken over by other agencies, though the voluntary hospital still performs for those agencies, as for its ordinary patients, the services for which it is best fitted, including consultative work and the advancement of medical knowledge. We would mention the Poor Law infirmary and the public fever hospital as two instances. It is possible that the best use of the voluntary hospital accommodation and equipment, present and future, would be promoted by some further development of this principle of partial specialization, either, for example, between one voluntary hospital and another, or between a parent hospital and branches such as homes of recovery and convalescent homes, or even, as in the instances mentioned above, between the voluntary hospital and the non-voluntary hospital.

It is pointed out that any policy which may be adopted must provide not only for current expenditure and reduction of debt but for such extensions of the voluntary hospital system as is urgently needed.

A central body will, it is considered, be a necessary part of hospital organization. In the case of hospitals in London this, it is thought, could best be provided by a development of the present functions of King Edward's Hospital Fund, which might become the central administrative body for the metropolitan area. The administrative body of the extra-metropolitan hospitals should be separate, but for the formulation of general policy a joint body, composed of members of both, should be formed, and be independent of any Government department or other public authority. If the King's Fund became the central administrative body for the hospitals in London it would continue to investigate hospital finance and administration, to promote economies, to examine extension schemes, and to receive voluntary contributions, but it could likewise provide a channel for the receipt and distribution of some form of public assistance, should that be determined on, either in a permanent or in a temporary form. The Council of the Fund is, however, clear that individual hospitals should continue to be under the management of unpaid voluntary committees with fairly wide powers of discretion and initiative. The receipt of payment from public authorities has not hitherto led to any material change in this respect, and it is hoped that the advantages of the voluntary system would continue to be so generally recognized that public or other bodies making payments to the hospital would, if they desired representation, be satisfied that it should be so limited as to be acceptable to the hospitals and not inconsistent in practice with voluntary management.

THE RECORD CARD AS EVIDENCE.

By a Legal Contributor.

Much has been written in the daily papers about "Record Cards." Some journals seem desirous of creating an impression that by reason of the publicity of the record card the secret of the consulting-room is to be no longer a secret; while others apparently assume that a record card becomes and remains a document which at all times and in all circumstances may be put in evidence either for or against the person with whom it deals.

In view of the fact that laymen do not always understand the law of evidence, it may be interesting to discuss the following question: "How far is an insurance medical record card evidence in a court of justice?"

It may be stated at once that it is not what the lawyers term a "privileged" document. This is for the simple reason that there is no such thing as medical professional privilege. A doctor is bound to state on oath in the witness box all he knows about his patient. This rule is well known and well recognized; but the writer has been unable to find the report of any case in which a doctor has been punished for its infraction.

Dr. Bateman,[1] indeed, recorded one case in which, on a summons by a married woman for arrears of maintenance, a medical practitioner was subpoenaed by the husband's solicitors. On being sworn, he was asked if he had not attended the woman professionally on a certain date, she being in labour. He declined to answer, claiming privilege. The Bench pointed out that such privilege did not obtain, and as he again refused they adjourned the case for a week in order to allow him to reconsider his position. He still refused when the court sat again, and the Bench allowed him to retire without inflicting any penalty. But it is conceived that some penalty might have been inflicted, or he might have been exposed to any action at the suit of the husband.

The record card, from the standpoint of the law of evidence, is in no better position than the evidence of the doctor himself. It is in no sense privileged. But is it admissible in evidence, and, if so, when and in what circumstances? This is a question which those responsible for the outcry about record cards in the daily papers do not pause to answer.

One thing is plain—the record card has not been made "evidence" by statute. In this respect it bears no resemblance to such a document as a death certificate, which is admissible (for many purposes) as evidence of the date and cause of death. The evidential value of an an insurance medical record card must be considered according to the ordinary rules.

It is a general rule in courts of justice that the *best* evidence must be produced in order to establish a particular fact. Thus if the question is—Was Mr. A. suffering from influenza on January 1st, 1921? the best evidence is oral testimony of the doctor who then saw and prescribed for him. The doctor may make an entry of the fact in his diary or case-book or on the record card. But those entries are not evidence. So long as the doctor lives his testimony, given verbally in the witness box, must be adduced in order to establish the results of his diagnosis.

Suppose, therefore, a doctor were subpoenaed to produce his record card relative to Mr. A. The doctor might come to court and produce the card, but the card itself would not be evidence for or against Mr. A. It could only be used by the doctor as a memorandum made at the time to refresh his memory; but it could not be used otherwise, even if it came from official custody, unless the other party to the suit asked for and cross-examined the doctor upon it. It then becomes "evidence" of the facts recorded upon it. Its effect, as evidence, would be precisely the same as an entry in the doctor's diary.

The reason for this rule is very simple. The entry on the card was not made on oath. The lawyer treats it as mere hearsay. But, owing to the fickleness of human memory, the rule has long been recognized that any witness may refresh his memory from a contemporaneous record made by himself. The insurance medical record card might therefore be used in this way by the doctor who made the notes upon it.

The record card, however, will assume a new importance after the death of the doctor. Entries made by him in his books or elsewhere have then an added value, and, when looked at from this point of view, that which may be written on the record card may be of great importance. It is a well known rule that entries made by a deceased person in the performance of his duty are admissible as evidence of the facts recorded; but they must have been made in the course of duty. Mere entries jotted down by a doctor in his diary are not so made. This may be illustrated by a case which was heard last year.[2] It was alleged that the respondent to a divorce petition was suffering from a certain disease which had been communicated to the petitioner. The doctor who had attended the respondent at the material time having died, his successor in practice was subpoenaed *duces tecum* to produce notes made by the deceased practitioner in connexion with his visits and attendances on his patients. The witness, having brought the notes to court, objected to producing them unless so ordered by the court. Sir Henry Duke refused to allow them to be read as evidence. He said that to render a note written by a deceased person admissible "it is essential that not only should it have been made in the due discharge of the business about which the person is employed, but the duty must be to do the very thing to which the entry relates and then to make a report or record of it. . . . I cannot see that any duty was cast upon this consulting physician to make these entries. He was practising alone and not in partnership, and he did not make the entries in pursuance of any duty to the persons consulting him, nor in pursuance of any statutory rule, or any binding rule of the profession. I am therefore not able to receive the entries." The same rule applies to oral statements made by a doctor.

In another recent case[3] it appeared that a petitioner for divorce stated in the course of her evidence that she had consulted a medical man who made a statement to her as to the nature of an illness from which she was suffering. The doctor having died before the hearing of the petition it was contended that the statement, although it was hearsay, was admissible, as having been made in the ordinary course of duty. It was, however, rejected by Mr. Justice Bargrave Deane.

The record card, however, differs in a material respect from a mere entry in a diary. It is undoubtedly made in the discharge of a public duty, and, as such, it would be received in evidence. While not necessarily conclusive—for it might be proved, *aliunde*, to be erroneous—it would go a long way towards establishing the fact which it purported to record.

One other aspect of the matter ought to be mentioned. It would be competent for the Ministry of Health to claim privilege for record cards as being confidential documents the contents of which ought not, in the public interest, to be disclosed. That public departments will sometimes object to their records being produced on this ground was illustrated in a case which came before the Divorce Court in 1919.[4] It was there suggested that the respondent, who was in the army, had contracted a certain disease, which he had communicated to the petitioner. Application was made to the War Office for the production of the medical history sheets relating to the respondent. Counsel for the Secretary of State for War objected to producing these documents, on the ground that they must be regarded as confidential documents, and that it was not in the public interest that they should be produced. The learned judge, who refused to order the production of these documents, said, when giving judgement, "The Secretary of State has declared as to the medical reports made while the respondent was on active service, that the exigencies of the public service precluded their production, and I am not in a position to quarrel with that decision. I am therefore excluded from a valuable source of information." It is interesting to notice that in the letter which was received by the petitioner's solicitors from the War Office refusing the information, it was pointed out that the doctors who attended the respondent might be subpoenaed to give such evidence as they could from personal recollection, "but the Department has at present no information as to who they were or where they are at present to be found." It should be mentioned that in this particular case a medical witness who had examined the respondent

[1] *Transactions* of the Medico-Legal Society, vol. ii, p. 55.

[2] 36 *Times Law Reports*, 772.

[3] D. *v.* D., 22 *Times Law Reports*, 52.

[4] See *Times Law Reports*, vol. 35, p. 559.

after the period in question stated that in his opinion the respondent had never suffered from the disease in question; and the petition was in fact dismissed.

This case suggests a further inquiry. Assuming the War Office had consented to produce the medical history sheets, could they have been put in evidence unless the doctors responsible for the statements in them were called as witnesses? The answer to this may be found in the first part of this article. In the absence of the doctor who made the entries on the medical history sheets they would not have been available as evidence, unless the doctor were dead.

Whether the Ministry of Health will decline to produce record cards on the ground that they are public documents remains to be seen.

THE FUTURE OF POOR LAW INFIRMARIES.

RESUMED DISCUSSION AT THE HARVEIAN SOCIETY.

THE discussion at the Harveian Society on "The future of the Poor Law infirmaries," which was adjourned from December 16th, 1920,[1] was resumed on January 27th. Dr. G. DE BEC TURTLE presided over the meeting, which was held in Paddington Town Hall.

A communication was read at the outset from Dr. F. E. FREMANTLE, M.P., who was prevented by illness from attending. He wrote that there was a danger that the Ministry of Health, which was pledged to deal with the Poor Law in the near future, might, owing to pressure on Government time, decide to make use of the infirmaries to meet present needs, and so institute an additional system, with no fixed interests or limitations, which would make still more difficult the eventual establishment of medical provision on comprehensive and efficient lines. The aim should be to provide in every unit of administration a complete system for the treatment of the whole population. As much freedom as possible should be retained for doctor and patient, and for nurses, pharmacists, and others; as much as possible should be left to private enterprise, and it should be arranged for as much payment as possible to be made by the patient, directly or indirectly, but the State should be responsible for filling all gaps and co-ordinating all factors, institutions, and departments into an efficient and economical whole. Above all, it was necessary to insist that prevention, cure, and research must go hand in hand; the growing tendency, especially under State management, to separate these aspects of medical work was a serious danger.

Dr. A. G. STEWART, Medical Superintendent of Paddington Infirmary, entered upon a whole-hearted defence of Poor Law infirmaries against common misconceptions. It was often thought that the infirmaries treated only chronic cases, but in a recent year 50 per cent. of the patients admitted at Paddington made a stay of less than a month, and 75 per cent. a stay of less than two months. Nor did these institutions deal only with the aged, for 30 per cent. of the patients admitted were under 10 years of age. Again, Poor Law infirmaries did not deal exclusively with the sick of the workhouse; only 20 per cent. of the admissions in 1914 were workhouse patients; the great majority of the patients were hardworking people whose need for relief was only due to their sickness. Over 60 per cent. of patients in his infirmary paid towards their maintenance. The prejudice against Poor Law infirmaries had been exaggerated; he had been told by several general practitioners in the district that patients preferred the infirmary to the hospital. While admitting that infirmaries were not equipped or staffed to meet the new demands upon them, he resented the suggestion that they provided little more than food and shelter. For years such work as bone-plating and grafting had been carried out at the infirmary, and hundreds of acute abdominal operations had been done annually. The nurses were as well trained, at any rate as regards private nursing, as in a general hospital. In defence of the guardians, he said that many boards took a surprisingly broad point of view, and devoted a good deal more time to their duties than the boards of governors of a general hospital. One complaint in which there was substance was as to the lack of classification of cases. But infirmaries were compelled to take in all medically deserving cases, however full they might be; they were not at liberty, like the voluntary hospitals, to set aside wards for certain classes of cases and fill up their vacancies from waiting lists. Dr. Stewart believed that both the voluntary hospital and the infirmary had a distinct future. The first would approach matters rather from the scientific, research, teaching, and specialist point of view; the second rather from the economic and general practitioner point of view; but if there was some central authority to co-ordinate the efforts of both, great improvements would be effected and money saved. As for the staffing of the infirmary, while he had always welcomed the specialist, he was bound to say that a very large part of the work could be done equally well by the general practitioner, and he did not see why there should not be part-time general practitioners on infirmary staffs, provided—but only provided—that they demanded sufficient remuneration to justify them in giving the necessary time to the work. Infirmaries could also do a useful work in training residents to become general practitioners; there was scope also for research work and for students. In the infirmary the student would see cases likely to be as useful to him as the rarer cases to which he devoted so large a share of his attention.

Dr. REGINALD DUDFIELD, Medical Officer of Health for Paddington, said that the care of the sick must be regarded as a national duty. Since the great stocktaking of national health incidental to recruiting, emphasis had been laid upon the need for tracing the beginnings of disease. But it was rare for the failing man, as distinct from the sick man, to seek medical advice. He was withheld, not only by the prospect of doctors' fees, but also by the possibility of orders to slow down his business activities. The State must step in and relieve the failing man to some extent of his burden. The speaker was unable to appreciate the distinction between State or municipal assistance and Poor Law relief; it was merely the difference between taking money from the right-hand pocket or the left. Why should not the State or municipality be looked upon as a national charity organization society? To meet certain objections, the infirmaries should be transferred from the Poor Law to the municipal authorities; he was not in favour of the setting up of *ad hoc* authorities, which were too often wasteful in personnel and administration. The existing authorities, county or municipal, were fully competent. The infirmaries in London should be transferred to the London County Council, as recommended in the Maclean Report. With regard to staffing, there could be no doubt as to the necessity of a resident medical staff. The whole of the visiting staff need not be consultants; he would like to see the local practitioners as visiting physicians and surgeons; rosters of willing practitioners might be formed. Every ratepayer should have the right of admission to the new hospitals if such admission was certified as necessary by the practitioner in charge of the case. This right would not mean free treatment in every case, but the principle of assessment now enforced by the London County Council for the treatment of the uninsured tuberculous might be applied. While no one would be compelled to enter the institution, such entrance in certified cases should be made a condition precedent to the granting of State aid for dependants.

Dr. J. B. COOK, from his sixteen years' experience of the inside working of several Poor Law infirmaries, regretted that certain unfounded and inaccurate statements should have been made (apparently in the previous discussion). The treatment of the sick poor as now enforced by the Ministry of Health was not in the parlous condition in which it had been represented. The infirmaries took in chronic cases, of course, but they also took in numbers of cases for which the voluntary hospitals had inadequate accommodation. If the infirmaries were "the rubbish-heaps of practice" he was proud to have such rubbish on his heap. Specialists were attached to many infirmaries, both in London and the provinces. The equipment in the institutions with which he was acquainted left little to be desired. The training of nurses in the modern infirmary was quite equal to that given in the average hospital. It was not the future of the infirmaries, but that of the voluntary hospitals, which was uncertain. In his view the infirmaries should become State hospitals for their respective areas. There was room both for the infirmaries and for the voluntary hospitals with their medical schools, but if the voluntary hospitals had to curtail their activities through lack of funds the State must come to the rescue there also, either by enlarging the State hospitals, or subsidizing the voluntary ones, or doing both. The infirmaries should be more adequately staffed with resident medical officers, and specialists should be available at each infirmary to act in consultation with the resident staff as required, and also to undertake certain specialist duties such as *x*-ray and laboratory work and electrical treatment. Finally, paying patients should be more widely encouraged.

[1] BRITISH MEDICAL JOURNAL, December 25th, 1920.

These suggestions would not entail any vast outlay, nor would they materially upset the existing institutions.

Dr. R. H. COLE said that it would be very useful to have special clinics at the infirmaries with a view to getting at the beginnings of mental disease, but such work meant enlarged staffs and more expenditure. The part which infirmaries might play in the future from this point of view was very important and should not be lost sight of.

Mr. ZACHARY COPE spoke in praise of Poor Law infirmaries. In one such institution 800 major operations were done during a recent year. There were, however, certain infirmaries in which the work was not up to standard, and which bore out the criticisms Dr. Wilson had advanced at the last meeting. He thought there was something to be said for the policy of separating the executive from the medical and surgical side. He believed also that the Poor Law infirmaries in London might help to solve the problem of post-graduate teaching, for they would bring the opportunity of clinical observation almost up to the practitioners' doors.

Dr. A. BLACKHALL-MORISON brought to the discussion an interesting communication which, however, went beyond the limits of the subject before the meeting, and entered into the question of a State medical service and the insurance controversy; in consequence of the time limit he was not permitted by the President to complete his argument. He claimed that the disadvantages of the previous situation in medicine—that is, the situation previous to recent health legislation—had been grossly exaggerated for obvious purposes. At the time when the "incipient nationalization of medicine" was imposed upon the profession, the profession was by no means oblivious to its responsibilities. It had not neglected education or investigation. To-day, however benevolent the intention of the legislature towards the community in general, its attitude towards the medical profession was one of less pronounced consideration, and in some quarters to speak at all of the interests of the profession was regarded as iniquitous. The speaker strongly protested against the charge that the profession had consulted unduly its own interests, and he claimed that an orderly freedom was the best medium in which it could grow and exercise its beneficent functions. As for the Poor Law infirmaries, these required not only more but possibly better officering, but to admit this was not to say that these institutions should be alienated from the purpose for which they had existed—namely, the care of the impoverished or necessitous poor. Persons not in that category could find all the medical attention necessary in their own domicile, and it was only those who had drawn their conclusions from institutional as distinct from domiciliary experience who could think otherwise. Both the voluntary hospital and the Poor Law infirmary would find abundant occupation when limited to their proper purpose as hitherto, and the former would obtain the support which it now lacked and would lack still more if the present subversive politics even temporarily succeeded. The speaker suggested, finally, the setting up of a central medical council, which would be a reformed General Medical Council, with greatly increased powers. This body would be responsible for the investigation, prevention, and treatment of disease. Such a council would better arrange the distribution of medical activity, charitable and other, than any lay body, however advised, which had not the full consent and sympathy of a united medical profession.

Dr. H. W. BRUCE said that as a general principle a good medical staff made a good hospital; hence the question of the medical staff of the future State hospital was important. The basis of that staff would always be the general practitioner, and therefore the desire to bring in the general practitioner was to be commended. It seemed very sound, if not essential, that there should be some close connexion between the doctors who sent the cases into hospital and those who there treated them. But in these State hospitals the old accusation that medical men always sent up the expense must not be made, and the cheapest way, combined with efficiency, of providing medical attention in hospital for patients was by means of whole-time general practitioners. A practitioner who was engaged partly outside and partly inside the hospital found both parts of his duty calling for him in the mornings. The speaker also referred to the function of the medical superintendent, who, he thought, should not be so overweighted with duties as at present. It was desirable that one medical man possessing the necessary authority should be simply in charge of the administrative side of a hospital, and control and co-ordinate its arrangements.

Dr. NATHAN RAW, M.P., opened with a reference to the Minister of Health, whose courage, he said, in introducing his Miscellaneous Provisions Bill was to be admired. The speaker did not doubt that the bill would be reintroduced. The point they had to discuss that evening was not the merits of the Poor Law or the voluntary hospitals, but the best way of co-ordinating the values of all the services. The number of beds provided by the voluntary hospitals was totally inadequate to the needs of the community; hence the proposal to transfer the Poor Law infirmaries into the general municipal health service. This was not a State service, and he for one hoped they would never see a State medical service in this country, but there must be a service available for the community at large, and the question was how to provide such a service to the best advantage. He remembered that in 1897 an application was made from the Sefton Poor Law Infirmary, one of the biggest in the country, of which for a long time he had charge, for the provision of an operating theatre, and the matter from the political point of view was regarded as of such importance that the Local Government Board was called together (for the first time in many years if not in its history) to discuss the principle involved—namely, whether the Poor Law authorities ought to confine their attention to relieving the destitute as in the past, or should progress with the times and provide for the poor the latest and best treatment in the way of operating theatres, laboratories, and specialities. It was then decided that the best methods of treatment should be adopted in the infirmaries, with the consequence that a great many infirmaries were now just as well equipped as the general hospital. Another factor—the disappearance of the pauper class—had by now come into operation; there was not the same need for Poor Law infirmaries as there had been twenty years ago. The working classes of this country were being properly remunerated. He had heard many members in the House of Commons voice the sentiments of their trade-unionist constituents to the effect that neither should charity be accepted from the voluntary hospitals on the one hand nor relief from the Poor Law on the other; hence the great difficulty which the Government had to face. It was not a political question, but one of expediency. In his judgement, the Poor Law infirmaries which were really no longer required for the destitute poor ought to be taken over by the health authority of the district in which they were situated and used as general hospitals so as to be available for all. This question had come to a head on account of the difficulty of securing support for the voluntary hospitals. Those hospitals were established simply as charitable organizations, and the general public no longer desired charity. On the other hand, he believed that legally no one could be received in a Poor Law institution unless sent by the relieving officer or as a case of urgency. If it was not legal to take non-paupers into Poor Law infirmaries, then the position should be legalized by transferring the infirmaries to the municipal authorities by consent. A certain amount of opposition would be raised to that policy, but in his opinion it was the only one possible.

Dr. J. C. MUIR said that the more one listened to discussions on this subject the more evident it became that the time was coming when it would be the normal proceeding for any person who was ill to go into hospital. If this were so the quality of such work which could be undertaken by voluntary hospitals must grow proportionately less, so that it seemed to be inevitable, whatever the hesitation and regret, that hospitals should be supported increasingly out of public funds. No doubt the public hospitals (the present voluntary hospitals) would continue to be the centres of teaching and research and advance, whereas the new hospitals (the remodelled infirmaries) would be the places in which the result of such advances was carried out in practice to the widest extent by the ordinary practitioner, who would have specialist opinion available.

Dr. C. L. TRAYLEN said that he was able to follow his patients into hospital at Willesden, and he thought it would be a great encouragement to the general practitioner if he was permitted to follow his cases into what were at present known as the Poor Law infirmaries.

Dr. WITHERS GREEN suggested that the old Poor Law service and panel service might be grouped together, and that here the infirmaries would play an important part, while paying patients should be received at the voluntary hospitals. There must be no suggestion of inferiority of medical service in one set of institutions as compared with the other. The appointments must be open to competition.

Dr. HUBERT C. PHILLIPS thought that the difficulty of appointing general practitioners to hospital posts was exaggerated. His own experience during the war as Deputy Commissioner for Bedford, as well as his experience in other capacities, suggested the contrary.

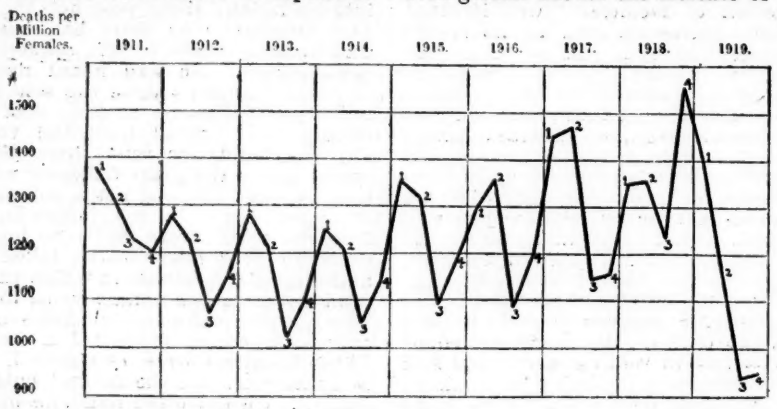
The PRESIDENT, in closing the discussion, said that

there was no doubt at all that changes were imminent. He hoped that there would be as large an amount of local autonomy as possible. The details of any particular scheme should be left to the district in which the scheme was to be worked. He was certain that, if the linking-up of institutions could be localized it would be the best plan of all so far as London was concerned. Each voluntary hospital might be linked on to two infirmaries. As for the selection of general practitioners, what better way presented itself than to make a combined medical committee of hospital and infirmary the selecting body?

TUBERCULOSIS IN 1919.

THE returns for 1919, given in the report of the Registrar-General for 1919, show a marked diminution in the number of deaths from tuberculous affections; they numbered in the aggregate 46,312 (24,550 males and 21,762 females), or 11,761 fewer than in the previous year. The crude mortality amounted to 1,258 per million—considerably below that of any previous year, the lowest hitherto having been 1,352 in 1913. The corresponding standardized rates are 1,261 in 1919 and 1,339 in 1913.

Discussion of the statistics is again embarrassed by the fact that it is considered essential to exclude the male sex, because the violent and incompletely traced fluctuations in the male population due to the war make it impossible to determine a series of reliable and comparable mortality rates for males. In the analysis of the figures, therefore, deaths of females are alone dealt with, as in previous reports since the outbreak of war. Pre-war experience seems to justify the assumption that the trend of mortality over a few years can be established by the experience of females alone, but, as Dr. Stevenson points out, this is perhaps open to question.



Mortality of females from tuberculosis in each quarter (1, 2, 3, 4) of the years 1911-19.

It is remarkable that a fall in the mortality from tuberculosis occurred in 1919, notwithstanding the effects of the influenza epidemic which continued into the early part of the year. Dr. Stevenson gives reason for concluding that the recent trend of tuberculosis mortality can only be profitably studied by disentangling it from the mortality caused among the tuberculous population by influenza. When this is done, he considers that the figures show that the tuberculosis mortality reached a maximum in 1917, and that a decline set in during the last year of the war, and developed to a remarkable extent during the first year of peace. He considers it necessary to lay stress on these points, as in the absence of their consideration the recently experienced tuberculosis mortality has been regarded as disappointing. In seeking to arrive at a conception of the course of tubercle mortality during 1918–19 an attempt has to be made to estimate what this would probably have been in the absence of the violent disturbance caused by influenza. Accordingly, the mortality of each quarter of the year is considered separately; only the second quarter was unaffected by influenza, and the other three quarters were affected in varying degrees. A diagram illustrating the mortality of females from tuberculosis in each quarter from 1911 to 1919 inclusive is here reproduced. It will be seen that after remaining at a minimum in the years 1912–14, the quarterly rates gradually increased during the three following years, but began to fall again during the first two quarters of 1918, after which the great epidemic of influenza temporarily arrested the fall, raising the rates for the next three quarters to a high level. The normal seasonal rise and fall of tuberculosis mortality shows a minimum in the third quarter and a maximum in the first or second. The second quarter was unaffected by the great epidemic, and is taken as most nearly representing the probable behaviour of the yearly mortality if the epidemic had not occurred. The curve of the mortality of the second quarter, after maintaining a minimum for the three years 1912–14, gradually rose during the next three to a maximum in 1917 and then fell uninterruptedly to 1919, when the lowest point was reached. There was a reduction below the nine years' average from 10 to 20 per cent. in the last three quarters' mortality, but Dr. Stevenson points out that caution must be exercised in interpreting this.

"If," he says, "influenza increased the death rate of the preceding three quarters by killing off tuberculosis patients who would otherwise have died a little later, the great fall which has occurred since the epidemic came to an end may be in part attributable to this earlier removal of persons who would otherwise have died in the quarters of low mortality."

He does not, however, consider that this is a serious source of error. There is no evidence that mortality from the non-pulmonary forms of the disease was increased by the epidemic; these non-pulmonary rates were very low in 1919, and this is thought to point to a real decline in the destructiveness of tuberculosis. The statistics do not suggest an explanation of the reason why the increase of mortality which earlier experience seemed to connect with the war should have given place to a decrease in the earlier part of 1918, while war conditions were still at their maximum. The decline in 1918 would have been even greater but for the increase of the mortality returns from lunatic asylums; the number of the deaths in asylums fell from 5,605 in 1918 to 3,326 in 1919. The institutional mortality, however, remains very high, for the asylum deaths in 1912–14 numbered only about 1,800 a year; it is hoped that the restoration of normal conditions in asylums will lead to a further reduction of the general mortality.

The continued fall in tuberculosis mortality in both sexes at ages 0 to 5, which Dr. Stevenson considers is perhaps the most prominent feature in the recent movement of the tuberculosis mortality, was greatly accelerated in 1918. The rate used to be the highest at any age; it is now exceeded at several other ages. The age of highest female mortality was (1851 to 1890) 25 to 35; in 1891 to 1910 it was the age period 35 to 45; since 1916 the age group with the highest rate has been 20 to 25, except in 1917, when that for 15 to 20 was higher. It has been thought possible that the heavy increase of the mortality among women at ages 15 to 25 which occurred during the war was due to increased employment, but Dr. Stevenson points out that even before the war the fall in mortality was shared only to a trifling degree by females of these ages.

SINCE the Ministry of Pensions entered into possession of Ewell Colony, which has been leased to the Ministry by the London County Council for two years from November 1st for the treatment of pensioned patients suffering from shell shock, neurasthenia, and kindred conditions, 245 patients have been admitted and 28 have been discharged. The total accommodation provided is 400 beds.

THE London County Council is asking the Minister of Health to receive a deputation for the purpose of representing the urgent need for the provision of accommodation for transmigrants whilst in the Port of London, and for preventing transmigrants suffering from infectious diseases from becoming a source of infection to the population. During the past few months there has been serious overcrowding in premises utilized for the accommodation of transmigrants, and cases of favus and trachoma have been found amongst the transmigrants in London.

British Medical Journal.

SATURDAY, FEBRUARY 5TH, 1921.

THE PREVENTION OF LAMENESS AND DEFORMITY.

THE Cameron Lecture, published in this issue, is, we venture to think, worthy of the careful attention of the authorities of all medical schools. Speaking at Edinburgh, Sir Robert Jones made special reference to conditions there; but the principle involved is the same everywhere, and its importance has already been recognized by some schools, including Liverpool, and at least two in London—St. Thomas's and King's College. Briefly stated, the lecture is a plea for giving to medical students during the course of their ordinary curriculum some general idea of the principles upon which rests the department of medicine that, for want of a better name, must be called orthopaedics.

Very great progress has been achieved during the last twenty or thirty years through the application of the primary principles of physiology and pathology to the problems presented by congenital defects and the consequences of accident or disease affecting the limbs. Coupled with this development on the philosophical side have been simplifications and improvements on the practical side; aseptic surgery rendered possible many kinds of operations which the earlier orthopaedic surgeons did not dare to attempt, and almost at the same time Thomas of Liverpool devised methods and appliances which in their directness and simplicity bore the stamp of genius. The study of his methods afforded a starting-point for a few ardent spirits in this country and America, who have advanced the department of orthopaedics to its present position. Not only are the principles which should guide the treatment of congenital deformities and of fractures better understood and the methods of treatment greatly improved, but ideas on the treatment of infantile paralysis, and to some considerable extent of tuberculosis of bones and joints also, have been profoundly affected. We now see more plainly that early treatment can do much, and have learnt what the nature of that treatment should be. It is perhaps true that there has been, on the part both of the profession and of the public, a disposition too readily to accept deformities as inevitable evils, and undoubtedly the task of those few surgeons who have given special attention to their remedy has been made harder because treatment has not been attempted at a sufficiently early date. The war produced an enormous number of injuries of the limbs, and observation made plain the ill effects of delayed or imperfect treatment, and demonstrated the remarkable success to be obtained when well-devised methods were early instituted. It is, for instance, astonishing to be told that in the three hundred cases of fracture of the femur in the special military hospital at Edmonton at one time the average shortening was less than half an inch, and that at the Alder Hey military hospital results equally good were obtained from the use of Thomas's splint in its original simplicity.

We have a fairly well defined set of conditions which, though due to different causes, have two things in common: first, that their treatment calls for the application of the same or similar principles and appliances, and secondly, that they are of great economic importance. Further, it is agreed that treatment on the correct lines ought in all cases of this class to be instituted at the very earliest date. Even if the practitioner is not himself prepared to undertake the initial manipulations, where such are necessary, it is important that his training as a medical student should have included sufficient instruction in the principles and methods of orthopaedics to enable him to judge what can be done, and when it can best be done, and to conduct the after-treatment, for which, indeed, the operations and manipulations of the specialist are only preparatory.

We entertain no doubt that the case for a special orthopaedic teaching department in every medical school has been fully made out, and we believe that anyone who looks into the facts must arrive at the same conclusion. The plan proposed seems to be in line with recent developments in the organization of medical education, which have been designed to render it possible for the student, within the time available, to receive a grounding in all the many subjects his acquaintance with which must be sufficient at least to enable him in after-life to judge their relative importance. We do not mean that cases of this nature should be withdrawn from the scope of the general surgeon; the contention is that there should be a special teaching department in which every student should receive instruction in principles he ought thoroughly to understand. Nor will it lay another burden upon the student; he is not asked to give more time, but is offered greater facilities for acquiring knowledge in a department of practice with which it is essential he should be acquainted when he goes into general practice. If he will then have relatively few cases of fracture to treat, he will certainly be consulted about many congenital deformities, and will have to treat the results of acute anterior poliomyelitis, tuberculosis of bones and joints, and often rickets. It may be that in some medical schools it will at first be difficult to make the readjustments necessary for the establishment of an orthopaedic department under a special surgeon, but that these difficulties can be overcome is proved by the plan described by Sir Robert Jones as already in force at the Liverpool Royal Infirmary and St. Thomas's Hospital; King's College Hospital also has established an orthopaedic teaching department. We cannot suppose that Edinburgh, the largest medical school in the British Empire, with traditions envied by all, to quote Sir Robert Jones's estimate, will lag behind. The moment is favourable for action, when the lessons of the war are still fresh in the minds of the profession and of the public.

THE INDUSTRIAL FATIGUE RESEARCH BOARD.

IN the *Scotsman* of January 24th the categorical announcement is made that "the Treasury have intimated that after the end of March they will not be able to continue any allowance to the work of the Industrial Fatigue Research Board, which it is suggested should be dissolved, and the work undertaken by other authorities or borne by the industries themselves." Our contemporary optimistically holds that this decision "will incur the opposition of practically all progressive employers and labour leaders," and directs attention to the importance of the work already carried out by the Board's staff, instancing

the researches of Dr. H. M. Vernon into the methods of the iron and steel industry, of which we gave some account a fortnight ago (January 22nd, p. 131). The history of this Board is so instructive that we may be permitted to recall certain facts. Three years ago, in December, 1917, the Department of Scientific and Industrial Research was invited by the Home Secretary to appoint a committee to investigate the subject of industrial fatigue on comprehensive and systematic lines. The suggestion was welcomed by those to whom it was addressed. It was apparently felt that a more imposing body than a mere temporary committee was needed, so the Department of Scientific and Industrial Research and the Medical Research Committee (as it then was) appointed a Research Board to organize and direct researches falling within the following terms of reference: "To consider and investigate the relations of the hours of labour and of other conditions of employment, including methods of work, to the production of fatigue, having regard both to industrial efficiency and to the preservation of health among the workers." The personnel of the Board now includes the President of the Royal Society, who has been chairman since the Board's inception, two other distinguished Fellows of the Royal Society, Sir Joseph Petavel, Director of the National Physical Laboratory, and Dr. C. S. Myers; also two leading authorities on industrial medicine, Dr. T. M. Legge and Professor E. L. Collis, and such representative employers of labour as Mr. W. L. Hichens, Chairman of Cammell, Laird and Co., and Dr. Kenneth Lee, of Messrs. Tootal, Broadhurst, Lee and Co.

The task entrusted to the Board under the terms of reference was immense. Before the pioneer researches of the Health of Munition Workers Committee (under the leadership of the present Chief Medical Officer of the Ministry of Health) practically no systematic scientific investigations of the human factor of industry had been carried out. The Health of Munition Workers Committee reached various important conclusions which, like most good scientific work, pointed the way to other urgently needed researches. But the supply of trained investigators was small; it consisted, indeed, only of those who had been employed by the Health of Munition Workers Committee. The Board had therefore, in the first place, to assemble and train a staff, and to deal with such problems as its immediate resources enabled it to investigate. The first annual report, issued only a few months ago, recorded a very promising start, and thirteen reports have already been published or are at press. These include the report by Dr. H. M. Vernon above mentioned, which contains, *inter alia*, an extensive analysis of the sickness and mortality experienced by 24,000 iron and steel workers which is of great interest to the student of industrial morbidity. Another investigator of the Board, Mr. P. M. Elton, has made a report upon production in silk weaving which brings out the detrimental effect upon output of working by artificial light; while Dr. Vernon, in another memorandum, has shown that although increase in hourly output follows at once upon reduction of hours the converse is not true, but a fresh state of equilibrium takes time to establish.

To the trained man of science, familiar with the difficulties of investigating a new field, the slow evolution of an appropriate technique, and, above all, the pains needed to organize a staff, the achievements of the Board in its first year will seem creditable. Such a person might suppose that the eminent men of science who have devoted time and thought to what, in 1917, was regarded as a matter of vital national importance, would be given an opportunity to build upon the foundations they had constructed. But, to judge from the paragraph in the *Scotsman*, any such supposition would be wide of the mark. The President of the Royal Society and his colleagues may be gratified as taxpayers at this new success of the economy campaign, even if, as men of science, they may feel some little disappointment at the outcome of their labours. After all, 1917 was a long time ago, and the financial condition of the country was no doubt eminently prosperous then; it could hardly have been foreseen that in 1921 there would be any real need for economy, while the officials of the Treasury no doubt expected that the Board's terms of reference would have been discharged within two years at most; this is the view that any administrator devoid of scientific training would naturally take.

We have at least the satisfactory assurance that knowledge will continue to be acquired, since, as we understand, similar research organizations have been created by the Governments of the United States and France. These organizations will have derived advantage from the spade-work of the English Board, and their results will, with due regard for economy, be abstracted in the English journals.

A cynic has remarked that the wise father will always steadily prophesy evil of his son, since, whatever happens, either his paternal feelings or his intellectual vanity will be flattered. We have often expressed the fear in these columns that the war-time enthusiasm for science in general and for medical science in particular, having no root in an educated public opinion, would wither away, so that we cannot pretend to be surprised by the fate which has overtaken the Fatigue Research Board; it is precisely what we should have anticipated. But there is one point which specially concerns the medical profession. According to its last report, the Medical Research Council is in some sense responsible for the Fatigue Research Board, and, presumably, approved its plans. Are we to infer that the action of the Treasury, as expounded by the *Scotsman*, is to be interpreted as a hint to the Medical Research Council, like that of Flamininus to the Achaean League? If so, what are the limits of the shell beneath which the head of the tortoise is safe? The time may not be far distant when other objects of research yet more intimately connected with the progress of general and preventive medicine will be consigned by the Treasury to the scrap-heap.

We have not told this story for the mere journalistic pleasure of criticizing a Treasury decision. If the facts are as stated by our contemporary, and if the decision to dissolve the Board and dismiss its staff has been reached suddenly and only communicated to those concerned within a few weeks of its contemplated coming into effect, it is undeniable that so honoured a member of our profession as the President of the Royal Society has been treated with discourtesy and avoidable hardship has been inflicted upon younger investigators. But, in these times, discourtesies and even hardships are no great matters. What is of vital importance for us all to realize is that the ideals of science, instead of counting for more, count for much less than six years ago. Viewed from this aspect, no more instructive incident could have happened. Abstractly considered, scientific research could hardly be presented to the British public in a more inviting shape than that provided by the terms of reference and the personnel of this Fatigue Research Board. The terms of reference made an appeal both to the spirit of humanity and to the

yearning for industrial efficiency—it were, perhaps, too harsh to say to the cupidity—of the average Briton. A combination of the holder of the greatest honour in British science with the foremost representatives of organized industry would seem unshakable. That a scheme launched under such hopeful auspices should be shipwrecked almost at the beginning of the voyage is indeed a portent.

"We are witnessing," said Dr. Inge in last year's Galton Lecture, "the decline and fall of the social order which began with the industrial revolution 160 years ago. The cancer of industrialism has begun to mortify, and the end is in sight." That a national application of scientific method to the study of the human side of industrial organization is one of the first things to be sacrificed when expenditure must be curtailed, is a proof that the Dean of St. Paul's has accurately diagnosed the case.

THE LONDON UNIVERSITY LABORATORY.

A FEW weeks ago a brief account was given of the circumstances which threaten the early closure of the Physiological Laboratory of the University of London, and regret was expressed that the Senate should have rather tamely acquiesced in the extinction of the one laboratory under its direct control. Briefly the story is this: The Laboratory was established in 1902; the University granted the use of the top floor (then unused) of that part of the building of the Imperial Institute, South Kensington, which it occupies; a sum of £4,000 was provided by private benefactors for equipment. Professor A. D. Waller has been director, unpaid, from the first. The cost of upkeep is about £1,300 a year; of this the London County Council has provided £500 and the University the remainder. There is no question of the efficiency of the Laboratory and of the value of the work done there. It has had a great influence on the progress of physiology, for it is a research laboratory with an organization for higher teaching—for teaching the teacher, in fact. In 1906 Convocation took it as a model upon which other university research laboratories and courses of advanced lectures might be formed. In 1908 the Senate received and endorsed identical reports from the Academic Council and the Council for External Students, to the effect that it was highly desirable to continue the work of the Physiological Laboratory as forming a valuable part of the work of the University. The present unfortunate state of things has been brought about, or at least precipitated, by the London County Council's announcement that it intends to stop its grant of £500 a year. Thereupon the Senate, on December 15th, resolved that, failing the assurance of adequate support from the County Council or other sources before the end of March, the Laboratory must be closed not later than the end of next July. It seems a poor little economy for either of these public bodies to attempt—poor in spirit and little in amount. The Senate is said to be influenced also by a desire to obtain more space for its clerical staff, but at present the key of the situation is in the hands of the County Council, and we trust that it will listen to the advice tendered to it. At its first meeting after the Senate's decision was known the Physiological Society unanimously adopted a resolution expressing its opinion that the closure of the Laboratory "would be a grave injury to the advancement of science and knowledge and to the teaching of physiology in London, and would therefore be contrary to the public interest." This view is generally held in the medical profession and by all men of science. It is that of the teaching profession, and, indeed, it must be shared by the great majority of educated persons in London and throughout the country.

CONGRESS OF RADIOLOGY AND PHYSIOTHERAPY.

THE first Congress of Radiology and Physiotherapy, organized by the Electro-Therapeutic Section of the Royal Society of Medicine and the British Association of Radiology and Physiotherapy, will be held in London on April 14th, 15th, and 16th, 1921, under the presidency of Sir Humphry Rolleston, K.C.B. The opening ceremony will take place at the Royal Society of Medicine on Thursday, April 14th, at 10 a.m. The work of the Congress will be divided into three sections—Radiology, Electrology, and Physiotherapy—and at each session opening papers will be read by representatives of France, Belgium, and England. All communications may be made in French or English. In addition to the set discussions and demonstrations, visits will be paid to the radiographic and electrical departments of selected hospitals in London. The Sections of Electrology and Physiotherapy at a joint meeting will discuss the re-education of muscles, which has formed the subject of recent correspondence in our columns. In connexion with the Congress there will be an exhibition of electrical and *x*-ray apparatus, and the social functions will include a Congress dinner and a visit to the universities of Oxford and Cambridge. On Saturday afternoon, April 16th, there will be a demonstration of physical training, organized by the Ling Association, at the Albert Hall. The subscription for English members is 2 guineas; that for French and Belgian members 40 francs. The Secretary-General is Dr. G. Harrison Orton, and the honorary treasurer Dr. J. Metcalfe, to whom subscriptions should be addressed at the Royal Society of Medicine, 1, Wimpole Street, W.1.

THE PANDEMIC OF INFLUENZA.

THE report on the pandemic of influenza (1918–19), which has been issued by the Ministry of Health, is, both from the scientific and from the practical or clinical point of view, a contribution of no little value to medical literature.[1] It consists of three parts: the first, dealing with the epidemic in Great Britain and Ireland, has been prepared by Dr. Major Greenwood and Dr. Thomas Carnwath, in collaboration with Dr. Herbert French and Sir Frederick Andrewes. A history of influenza in England from 1658 to 1911 is followed by a discussion of the statistics of 1918–19 in the United Kingdom, and this by an article from the pen of Dr. Herbert French on the clinical features of the epidemics of 1918–19, illustrated by coloured drawings and numerous charts. Appended is a long bibliography covering the years 1914–1920. Sir George Newman in his introductory note states that all observers are agreed as to the difference of the characters of the two waves, the first in June and July, 1918, the second in October and November. The first was of the three-day fever variety, not of virulent type, but remarkable in that it attacked youth especially. Damage to the capillary vascular system caused haemorrhages in the mucous and serous membranes, the respiratory tract, and the lungs; epistaxis was common. The condition is said in some ways to have resembled a bacteriaemia, localized in particular in the pulmonary blood vessels, haemorrhage paving the way for secondary infections. The second wave was of a much more severe type. It was often attended by early acute infective pulmonary inflammation, while in other cases the symptoms early assumed the type of a virulent toxaemia or septicaemia. Sir Frederick Andrewes contributes a chapter on bacteriology, in which the part played by Pfeiffer's bacillus is fully discussed. Speaking of the evidence obtained from the epidemic of 1918, he says that the position of Pfeiffer's bacillus as the primary cause of the disease has been in no way strengthened. "Its case remains unproven, and the crucial tests to which it has been submitted

[1] Ministry of Health Report on the Pandemic of Influenza. Reports on Public Health and Medical Subjects. No. 4. 1920. H.M. Stationery Office. (10s. net.)

seem to indicate it rather as a secondary infection than as the primary 'materies morbi.' At the same time it cannot be asserted that, as a primary cause, it is wholly out of court. The evidence for a filter-passing virus as the primary cause of the disease is suggestive, but at present a final verdict cannot be given. The complications to which the epidemic has owed its abnormal fatality have been due to secondary infections in which Pfeiffer's bacillus and the haemolytic streptococcus have played a predominant part." Other chapters follow, including one on the general and special prophylaxis of influenza; here the hope is expressed that eventually vaccine prophylaxis may be placed upon a securer foundation than it yet possesses. Meanwhile, it is said that "the non-mystical methods which come within the scope of personal hygiene are those which both epidemiological and physiological research sanction." The second part of the volume presents an account of the incidence of influenza in Europe and the Western Hemisphere by Dr. R. Bruce Low, C.B., and of its incidence in Australasia and parts of Africa and Asia by Dr. S. P. James. The third part consists of a series of twelve papers reporting inquiries into different aspects of influenza as it occurred in this country. It contains results of a special study of the epidemic in Manchester by Dr. Niven and his colleagues, and by Dr. T. Carnwath, and a paper also by Dr. John Brownlee on the periodicity of influenza. We hope to refer in more detail to some of the articles in this interesting volume, which contains 600 pages, in future issues.

THE MACDONALD PRESENTATION FUND.

WE have received from Dr. Noy Scott, Honorary Secretary of the Plymouth Division of the British Medical Association, a letter expressing surprise that a larger number of members of the Association have not hitherto joined in the tribute of gratitude and regard to Dr. J. A. Macdonald afforded by the testimonial fund now opened. The only cause must be, he thinks, procrastination, for no member of the British Medical Association, nor any insurance practitioner, can be unaware of the great and self-sacrificing services Dr. Macdonald has for so many years rendered to the Association and the profession at large. The appeal for subscriptions to the presentation fund was published in full in the JOURNAL of July 24th, 1920. It was addressed to all members of the British Medical Association, and was signed by the President, the Chairman of Representative Meetings, the Treasurer, and by past Chairmen of Representative Meetings. After reciting briefly Dr. Macdonald's distinguished record of work for the profession, it proceeded: "In short, for the last seventeen years, whenever the Association has required exceptional services demanding sound judgement, devotion to the interests of the profession, and a commanding personality, it has called on Dr. Macdonald, and never in vain." The Council believes that members will desire to show their gratitude to Dr. Macdonald in a fitting and adequate manner. Subscriptions of any amount will be welcomed, but no individual subscription may exceed five guineas. Cheques should be made payable to "The Macdonald Presentation" and sent to the Medical Secretary, 429, Strand, London, W.C. 2.

A CANCER SERUM.

MENTION was made in the daily newspapers some months ago of a claim made by or on behalf of Dr. Glover of Toronto, to have prepared a "serum" which was alleged to have the power of curing or checking cancer. Last October the Toronto Academy of Medicine appointed a committee to inquire into the matter, and its interim report was presented on January 13th. The committee conducted its inquiry under two heads—experimental and clinical. As to the first, it was claimed that Dr. Glover had cultivated cancerous cells, and from them had cultivated and isolated an intracellular organism which he had found present only in cancer, and in every type of cancer. It was further claimed that by inoculation of these cells and organisms cancer had been produced in a number of animals—pigeons, rats, mice, rabbits, guinea-pigs, and hens—and that by injection of cultures of these cells and organisms into the jugular vein of a horse a serum had been obtained which, when injected into the experimental animals, rendered them immune to inoculation by the cancer cells and organisms above mentioned. In other words, animals previously treated by the serum were immune, while those not so treated developed experimental cancer. The committee reports that Dr. Glover refused to permit representatives of the committee to visit his laboratories or to allow the committee to examine his cultures and experimental material at present available; he did not accede to a request to demonstrate his ability to cultivate cancer cells and organisms, nor did he demonstrate his ability to produce cancer by inoculation or to immunize animals against it. The committee therefore reports that it has no evidence to substantiate Dr. Glover's claims on the experimental aspect of the question. On the clinical side the claim was that the serum injected in cases of human cancer had been found capable of producing improvement or cure. The committee examined twelve of fifteen cases selected by Dr. Glover. It sought to obtain from the medical attendants of the patients confirmation of the diagnosis, and a statement as to the clinical condition of the patient before applying to Dr. Glover. It also obtained a list of cases treated in St. Michael's Hospital, only those cases being included which had received at least five injections. The committee also sought to obtain from Dr. Glover a complete list of the cases treated by him privately, and from Fellows of the Academy, from other practitioners, and from the hospitals, reports of the results of serum treatment in cases which had come under their observation. The committee's examination of the data from all these sources afforded it no evidence to warrant a hope that a specific cure for cancer has been discovered by Dr. Glover, or that a cure has been produced by the serum in any case definitely established as cancer. With regard to the further question, whether the serum produces improvement in cases definitely established to be cancer, the committee reports that it has not obtained evidence of any apparent improvement greater than that which may occur spontaneously in certain cases of cancer. It notes that good results are at times observed in cases supposed to be cancer, but in which the nature of the condition has not been established on incontrovertible evidence; in such cases, it is added, the usual conclusion of the medical attendant is that his diagnosis was wrong. In concluding its interim report, the committee states its readiness to examine any data Dr. Glover may decide to place before it, and to collaborate with recognized authorities who have already expressed their willingness to do so, or with others whom Dr. Glover himself may nominate. We gather that the committee will not go further into the matter unless Dr. Glover supplies to it details of his methods sufficiently definite to permit of a repetition of the experiments by independent workers.

SPIROCHAETOSIS ICTERO-HAEMORRHAGICA.

WORK in connexion with spirochaetosis ictero-haemorrhagica, formerly known as Weil's disease, and now often spoken of as infective jaundice, though it is one example only of a rather large group, has been mainly directed to its etiology, pathology, and epidemiology; and it must be admitted that the study of its clinical manifestations has been less conclusive, though Inada's (1917) correlation of the clinical course with the pathological changes must not be forgotten. In his recent clinical analysis of 55 cases Dr. J. A. Ryle,[1] who was in close touch with the disease during its prevalence on the Western front, has taken steps to redress the balance. Although some cases occurred in the base hospitals during the winter of 1915–16

[1] J. A. Ryle, *Quart. Journ. Med.*, Oxford, 1921, xiv, 139–170.

it was in the summer and autumn of 1916 that an epidemic, of probably not more than 200 cases all told, involved the British army in a confined section of the forward trench zone near Ypres. The infected areas were wet and ill drained, and the case incidence increased after a wet spell and decreased after dry weather. The absence of any further epidemics on the Western front may, like the considerable diminution in the number of rats, which are the accepted carriers of the infection, have been due to the great increase in the use of poisonous gas. Out of the 55 cases, 40, or 73 per cent., had jaundice, the remaining 15, or 27 per cent., being free from icterus; and the mortality of 3, or 5.4 per cent., was confined to the cases with jaundice, although non-icteric patients were often as severely ill as the icteric cases. The onset is characteristically sudden, and the initial febrile period lasts on an average ten days, being followed by a subnormal temperature for one to six days; 18 per cent. of the cases relapsed or showed recrudescences, but the relapses were not necessarily accompanied by jaundice or grave signs; this last observation recalls Inada's very definite view that the return of fever is not due to spirochaetal activity, but to the reabsorption of spirochaetal toxins, and therefore is not a true relapse, and that the symptoms are merely those due to an elevated temperature and are not a repetition of those characterizing the original attack. Vomiting is a constant symptom of the disease and when frequent and persistent is a bad prognostic. The clinical features in the 55 cases show some differences from those of the disease in Japan, and also as described in pre-war literature; thus the mortality was much lower in France; the spleen, which was palpably enlarged in 10 per cent. of the Japanese cases and was a prominent feature in the descriptions given before the spirochaetal nature of the infection was discovered, was never found to be enlarged; increase in size of the liver was reported in 2 cases only; and herpes labialis, practically always haemorrhagic, occurred in 44 per cent. of the 55 cases. In other respects the recognized manifestations corresponded fairly well; albuminuria was noted in 58 per cent., acetonuria in 16 per cent., and pains in the legs in 44 per cent. In spite of the septicaemic nature of the disease, there was little evidence of any direct or permanent damage to the heart, and clinical evidence of cardiac dilatation was forthcoming in one case only. The average high limit of the pulse rate was 100, and a slow pulse, usually lasting for a short period, was common soon after the temperature had fallen. Epistaxis was noted in 9 cases, haemoptysis in 16; the extravasation of blood was referred to lysis of the capillary walls as a result of the septicaemic state, and not of the jaundice. The absence of haemoglobinuria and of increased fragility of the red blood corpuscles rendered haematogenous jaundice improbable, and the cause was thought to be obstruction in the radicles of the bile ducts; the possibility of excessive secretion of bile due to irritation of the liver cells is mentioned, but Brulé's contention that the jaundice is due to disordered function of the liver cells and is quite independent of obstruction is not considered. The differential diagnosis, especially of the early stages and of the cases without jaundice, in which trench fever proved the main stumbling-block, is fully discussed.

ANTHRAX FROM SHAVING-BRUSHES.

A CIRCULAR issued by the Ministry of Health draws attention to the recent occurrence of cases of anthrax in man, including some fatal cases, in which infection has been traced to the use of contaminated shaving-brushes. In the JOURNAL of January 3rd, 1920, p. 25, we recorded a protest by Dr. H. T. Maw against the importation of foreign-made (especially Japanese) shaving-brushes because of the insanitary conditions under which they were manufactured, and the possibility of infection by anthrax; special reference was made also by Dr. Maw to other brushes used for medical and toilet purposes, such as throat-brushes and tooth-brushes. In consequence of the number of random samples found infected, an Order in Council was issued in February, 1920, prohibiting the further importation of Japanese shaving-brushes into this country. Steps were taken to secure the destruction of brushes from consignments known to be infected, and all importers of and wholesale dealers in Japanese shaving-brushes were warned of the possible danger to persons becoming possessed of these brushes. Owing to the difficulty of tracing brushes imported before the prohibition took effect there is reason to believe that there must still remain in the hands of retailers a considerable number of shaving-brushes of Japanese origin which may be infected. Medical officers of health are asked, therefore, to communicate with all retail chemists and other dealers in shaving-brushes in their districts and warn them of the serious results which may follow from the distribution of Japanese shaving-brushes which they may still have in stock. Such brushes should either be destroyed or securely wrapped up and returned to the wholesale dealers from whom they were obtained, with an accompanying explanation. An improved method for the partial disinfection of shaving-brushes before use is recommended by the Ministry of Health; complete sterilization is impracticable, as disinfection will not affect spores embedded in the handle of the brush. The brush should first be thoroughly washed with soap and warm water containing a little washing soda, and allowed to stand for half an hour in a warm solution of formaldehyde (1 part of 40 per cent. formalin and 16 parts of water—a 2½ per cent. solution of formaldehyde); then it should be allowed to dry. In regard to the treatment of a case of anthrax, it is now recognized that the best method is physiological rest of the part affected, combined with intravenous injection of anti-anthrax serum—60 to 80 c.cm. on the first day, and 60 c.cm. on the day following. Subcutaneous injection into the abdominal wall of 30 c.cm.—repeated if necessary on successive days—has apparently been successful in many cases. Excision is now no longer recommended as an adjunct to the serum. The use of normal ox serum, referred to in a leading article in our issue of December 4th, 1920, has not yet had sufficient trial to displace treatment by anti-anthrax serum.

"JOURNAL OF LARYNGOLOGY AND OTOLOGY."

FROM the beginning of the present year the monthly *Journal of Laryngology, Rhinology, and Otology* has, with the alteration in its title given above, entered upon a new phase in its existence. Founded as the *Journal of Laryngology and Rhinology* thirty-four years ago, by Morell Mackenzie and Norris Wolfenden, it has now been purchased from the publishing firm who owned it by members of the profession, for whom it will in future be published by Messrs. Oliver and Boyd, Edinburgh. No radical changes are to be expected in the scope and policy of the journal, but it is hoped that under the new conditions it will appeal to all medical men interested in oto-laryngology, not only in the British Isles, but in the Overseas Dominions and in America. Laryngology as a special branch of surgery was cradled in Britain, and most of the great advances made in it have been of British origin. With the increasing number of workers in the speciality further advances in knowledge are to be anticipated, whether sought in the laboratory or by clinical observation in the out-patient departments and wards of hospitals. We look confidently, therefore, for a still larger and more valuable output of original contributions in the pages of the *Journal of Laryngology and Otology*. The January number reflects great credit on the new management, and on the editors, Dr. A. Logan Turner and Mr. J. S. Fraser.

CHINESE HONOURS FOR MEDICAL MISSIONARIES.

THE Chinese Government has conferred the Order of the Chia Ho, 5th Class, upon three British medical missionaries—Drs. Davenport, Cousland, and Gillison. Dr. Cecil J. Davenport was President of the China Medical Missionary Society during three years of the war, and recently presided at the Medical Conference held in Peking. He receives the Chia Ho for pioneer work in Chungking and Wuchang, and also for his work since 1904 as chief of the Shantung Road Hospital. He has seen thirty-one years' service in China. Dr. Philip B. Cousland was formerly at Chaochowfu, Fukien Province; he is now engaged in translating foreign medical books into Chinese and in helping to form a Chinese medical terminology. The decoration is bestowed for long and useful service in pioneer medical and literary work during thirty-seven years in China. Dr. Thomas Gillison worked for nearly thirty-five years in Hankow, and is now engaged in teaching and literary work in the Shantung Christian University, Tsinan. The award is in recognition of pioneer medical work in Central China, and of educational and literary work in Hankow and Tsinan.

A MEETING of Lord Cave's Committee on Voluntary Hospital Finance was held on February 2nd at the Ministry of Health, when evidence was given in the morning by Sir Cooper Perry and Mr. Maynard on behalf of the King Edward VII Hospital Fund, and in the afternoon by Mr. Verity, Chairman of Charing Cross Hospital. On February 3rd Mr. Vernor Miles gave evidence on behalf of the small general hospitals in the London area of the British Hospitals Association.

DR. PERCY KIDD, consulting physician to the hospital, has been elected Schorstein Memorial lecturer for 1922 at the London Hospital Medical College. The lecturer for this year is Dr. A. G. Gibson of the University of Oxford, who will give his lecture on chronic inflammatory diseases of the spleen on June 3rd.

DURING the twenty years that the Nobel Prize has been awarded there have been 101 prize winners, consisting of 23 Germans, 20 Frenchmen, 9 Englishmen, 8 Swiss, 6 Americans, 6 Swedes, 5 Dutch, 5 Danes, 4 Belgians, 4 Italians, 3 Austrians, 2 Norwegians, 2 Russians, 2 Spaniards, 1 Scotsman, and 1 Indian; 97 were men, 28 have died.

ROYAL MEDICAL BENEVOLENT FUND.

AT the meeting of the Committee held on January 11th, 1921, twenty-four cases were considered, and £255 voted to eighteen applicants. The following is a summary of some of the cases relieved:

Daughter, aged 68, of M.R.C.S.Eng. who died in 1874. Applicant has supported herself for some years by the teaching of drawing and painting, but owing to age and deafness is now unable to obtain pupils. Only certain income £26 a year and a gift from friends of £10. Rent £20 per annum. Voted £18 in twelve instalments.

Daughter, aged 44, of F.R.C.S.I. who died in 1899. Applicant shares a cottage with a friend, and they make a small income by taking boarders. Total income 1920, £75. Relieved once, £10, January, 1920. Voted £10.

Widow, aged 53, of M.R.C.S.Lond. who died in 1911. Applicant earns her own living by giving music and singing lessons. Her daughter, aged 26, helps her aunt, with whom she lives, but owing to a breakdown the doctor orders her away for a rest, and applicant asks for help to defray the expense. Relieved six times. Last time £10 in two instalments, December, 1918. Voted £15 in two instalments.

Daughter, aged 48, of F.R.C.S.I. who died in 1899. Applicant shares house with a friend, and they derive and share a small income from letting rooms. Applicant's total income during last twelve months, £40. Relieved once, £10, January, 1920. Voted £10.

Subscriptions may be sent to the Honorary Treasurer, Sir Charters J. Symonds, K.B.E., C.B., F.R.C.S., at 11, Chandos Street, Cavendish Square, London, W.1.

The Royal Medical Benevolent Fund Guild is overwhelmed, in these days of exorbitant prices for clothing and household necessaries, with applications for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles for the benefit of the widows and children who in happier times would not have needed assistance. The gifts should be sent to the Secretary of the Guild, 43, Bolsover Street, W.1.

Scotland.

THE CONSULTATIVE COUNCIL'S MEDICAL SERVICE SCHEME.

THE Scottish Committee of the British Medical Association has referred the report of the Scottish Medical Consultative Council to the Divisions in Scotland. As will have been seen from an analysis of the report published in our columns of December 11th it embodies a medical service scheme. Before formulating any statement on the scheme the Scottish Committee will await the replies of the Divisions, and though there will be a meeting of the Committee on February 10th it is not likely that many replies will have been received by that date. The Committee, however, may think it necessary to take some notice of the letter criticizing the scheme which the Medical Guild has circulated to the profession in Scotland. The letter, which is signed by the president of the Guild, Emeritus Professor F. M. Caird, and the honorary secretary, Dr. Frederick Porter, directs particular attention to the fourth recommendation of the Consultative Committee, which advised that "the present medical service for the insured should be *expanded*, so as to provide everything that is still necessary to make it adequate and complete, and *extended* so as to include within its scope the dependants of the insured, all persons (including dependants) of the same economic status as the present insured class, and all now entitled to medical service under the existing Poor Law." The Guild expresses the view that this means "that every tradesman, shopkeeper, and all others with incomes under £250 per annum, along with their wives, children, and others who may be dependent on them, will be provided with a State doctor." In many districts, including small towns and villages, this will, it is considered, leave very few private patients. As the State family doctor will have over him a junior and senior district medical officer to supervise his work, his position, it is argued, will "be lowered to the status of a scullery-maid in a State medical kitchen." The Guild has drawn up a memorandum, which it asks its correspondents to approve. The memorandum contains these passages:

"The family doctor is to be a State doctor, remunerated, presumably at a contract rate. The patients are to be State patients; they are no longer to be the doctor's private patients. The doctor becomes a departmental official, and the patient a name in the departmental directory.

"It is further proposed to have two grades of officials below the doctor. The one is the State nurse, who will enter the sick-room as a State servant, not with the beneficent influence of the present district nurse to help as she finds it practicable. The other is the health visitor, who is to act as a sort of State mother to the family, and is to officially instruct the mother how to treat her children. In the event of sickness, if the official opinion be that the house is too small, the sick person is to be removed to a 'hospice' or to 'recovery rooms,' which it is proposed to provide all over the country.

"There is no attempt to estimate the cost of this scheme, but it must be very great. When the country is groaning under the enormous burdens of the war, the proposals can only be regarded as monstrous."

The memorandum expresses the view that the State should cease to interfere with medical attendance on sick people other than those who belong to the necessitous classes, so long as the sick are not a danger to the community by reason of infectivity. A letter by Dr. Buist on this subject is printed in the SUPPLEMENT.

SCOTTISH REGIONAL HOSPITALS COMMITTEE.

A Regional Committee in Scotland of the British Hospitals Association was formed at a meeting of hospital managers and administrators held in Glasgow on January 25th. Colonel D. J. Mackintosh, C.B., M.V.O., Medical Superintendent, Glasgow Western Infirmary, occupied the chair. The Regional Committee, it was pointed out, would be an integral part of the British Hospitals Association, and only those who joined the parent body would be eligible for membership. The Committee will consider matters affecting voluntary hospitals, and take such steps to safeguard their interests as may be considered necessary. Colonel J. A. Roxburgh was appointed chairman and Dr. D. Campbell Suttie honorary secretary. An executive committee composed of representatives of groups of hospitals was appointed.

CENTRAL MIDWIVES BOARD.

At a meeting of the Board held in Edinburgh Sir Halliday Croom, in a valedictory address on his retirement from the Board, thanked the members for the loyal support he had received as chairman, and referred to the pleasant and harmonious way in which the work had been carried out. On the motion of Dr. A. Campbell Munro, seconded by Sir Archibald Buchan-Hepburn, a hearty vote of thanks was accorded to Sir Halliday Croom for the efficient manner in which, during a period of five years, he had discharged the important duties of chairman of the Board since its formation. The Board also expressed its appreciation of the able and valuable services rendered by Mr. D. L. Eadie, the secretary. The constitution of the new Board is announced in the SUPPLEMENT this week at p. 31.

Ireland.

VISIT OF SIR GEORGE MAKINS TO BELFAST.

SIR GEORGE MAKINS was entertained to dinner by the Council of the Ulster Medical Society and a few friends on the evening of January 28th; he also was shown over the hospitals, and on Saturday, 29th, was taken down to the well-known golf links at Newcastle to try his skill with some of the local medical talent. It gave all those who had met Sir George in France the greatest pleasure to welcome him to the North of Ireland, and his reputation had been spread by those who returned after serving, so that the warmth and heartiness of his reception was general, and his visit was greatly appreciated.

ULSTER MEDICAL SOCIETY.

The sixth meeting of the session was held in the Medical Institute, Belfast, on January 27th. The President, Dr. Thomas Houston, occupied the chair, and there was a large attendance. The President presented the Certificate of Honorary Fellowship to Major-General Sir George Makins, G.C.M.G., ex-President Royal College of Surgeons of England. He referred to the great services of Sir George in the war; to his very kindly relations to the hospital at Etaples with which so many of the Belfast Medical School were connected; to his judicial and convincing contributions to the Medical Society at Etaples; and to the charm and sympathy of his character, which endeared him to all who were fortunate enough to work under him. The Society had not many honours to bestow, but they asked his acceptance of their highest honour, of which they were somewhat jealous. There were only nine on the list, and in former times it contained such names as Lord Lister. Sir George Makins, in thanking the Society, referred to his indirect connexion with Belfast through the late Sir William MacCormac, whose dresser he had been, and with whom he worked for many years in close personal friendship, and at whose house he had met many Belfast people. He then gave his address on "Injuries to the heart." He referred to the experience in civil life and at the front during the war; to the dangers of shock, secondary infection, injury to valves and to the vital strands of muscle; the small amount of blood in the pericardial sac was astonishing. Illustrations were thrown on the screen of many specimens, and details given of many cases, as the "hydraulic explosion effect" in a full heart or the "burst paper bag." He then dealt with the symptoms and with the great difficulty of the interpretation of the curious and rare physical signs, such as the "tapping" sound, or click, supposed to denote a foreign body in or near the wall of the heart. In cases of injury to the heart, the diagnosis might be very simple or very difficult; the prognosis of operation on the actual heart was 50 per cent. mortality; higher figures were given. The indications for operation and the technique were referred to. Professor Sinclair proposed, and Dr. J. Walton Browne seconded, that the heartiest thanks be given to Sir George Makins for his most interesting and instructive address. This was passed by acclamation.

WOUNDED PERSONS IN DUBLIN HOSPITALS.

Notices have been served on the authorities of all Dublin hospitals requiring them to furnish daily to the military authorities a list of patients admitted suffering from bullet wounds. The Crown forces can at present enter the hospitals at any time, day or night, and have been doing so. In the circumstances the hospital authorities consider it invidious to furnish the return required by the military. The following is the text of the Order:

To the Secretary, ... Hospital.

By virtue of the powers conferred on me under Regulation 53 of the Restoration of Order in Ireland, Regulation 1, the undersigned, being a Competent Military Authority under the said regulations, do hereby order you, the secretary, being the person in charge of the ..... hospital, to furnish to me (in writing) the names and descriptions of all persons admitted to your hospital who are or are suspected to be suffering from wounds caused by bullets, gunfire, or other explosives, together with such particulars and information concerning them as may be within your knowledge. Such information is to be furnished by you daily to me at Headquarters, Dublin District, Lower Castle Yard, Dublin. Failure to comply with this order will render you liable to be proceeded against for an offence against the Restoration of Order in Ireland Regulations.

R. D. F. OLDMAN, Colonel Commandant,
Commanding Dublin District,
Competent Military Authority,
Lower Castle Yard, Dublin.

Mr. H. S. Meade, Surgeon to St. Vincent's Hospital, Dublin, has stated that the Order was dead against the etiquette of the profession, and has declined personally to make such reports. His surgical colleague, Mr. J. S. McArdle, in an interview reported in the *Freeman's Journal*, said that the order would indicate that the surgeons might betray confidences in their own hospitals, because it was only they, not the secretary, who could learn the particulars of any case placed under their care; he expressed the opinion that no power on earth would make Irish surgeons go back on the responsibilities which have grown with their advances to the higher walks of the profession. Dr. Sigerson, in an interview, recalled the fact that during the revolutions in Napoleon III's time the French hospitals refused to do what the Irish hospitals were now asked to do. The French hospitals refused to give the names of revolutionaries who were being treated.

Amongst the recent arrests by the Crown forces in Ireland are a number of medical practitioners, including Miss Ada English, M.D., assistant medical officer, District Asylum, Ballinasloe. Dr. James Ryan, who graduated in the National University in 1917, was arrested some months ago, and, so far, has not been brought before a court-martial.

England and Wales.

PAYING PATIENTS AT A LIVERPOOL POOR LAW INFIRMARY.

FROM a communication made to the *Liverpool Courier* by Mr. Cleaver, clerk to the West Derby Union, we learn that a large number of paying patients have for several years been admitted to the hospitals in the West Derby Union, either as emergency cases, or because the patient could not obtain admission to a voluntary hospital or was unable to pay the charges of a private nursing home Recently the committee of the Mill Road Infirmary received a letter from Dr. W. B. Bennett, chairman of the Liverpool Branch of the Middle Classes Union, asking that definite provision should be made for such patients. The board of guardians agreed on January 26th that as an experiment arrangements should be made for the admission to the infirmary of patients resident in the West Derby Union, either upon the recommendation of the patient's private medical attendant or upon personal application, subject to the discretion of the medical superintendent, who would have full power to grant or refuse admission. The arrangements provide for the admission of acute medical or surgical cases resident within the area of the union, either on the recommendation of their private medical practitioner or on the application of the patient or his friends. Such patients will pay three guineas a week, and their private medical attendant will be allowed to consult with the medical staff of the infirmary, but no interference will be allowed either in the treatment or nursing of such patients. The infirmary is administered by a medical superintendent, who is assisted by three resident medical officers; there is also a visiting staff, including a visiting surgeon, dermatologist, ophthalmic surgeon, and dental surgeon. It does not appear

how far these proposals accord with the wishes of the local practitioners, who may or may not regard them as valuable to the community, but they seem to differ considerably from any policy so far outlined by the British Medical Association.

PRESENTATION TO DR. BARTON, OF BLACKPOOL.

It had been felt for some time past by the medical practitioners of Blackpool and district that some tangible appreciation should be shown to Dr. H. T. Barton for his valuable services rendered to the profession locally for many years past. Dr. Barton has acted as secretary to the Local Medical Committee since the inception of the Insurance Act, and it is mainly due to his energy and his wide knowledge of the medical sections of the Act that the local practitioners have found insurance matters working so smoothly in this district. Dr. Barton also acted as secretary to the Local War Emergency Committee, and was of the greatest assistance to that committee also. With this object in view, a large number of medical men met at the Queen's Hydro, Blackpool, on December 15th last. After an excellent dinner, Dr. Godley (chairman) spoke of the esteem and regard with which Dr. Barton was held by the profession locally and of his untiring energy in the interests of the profession, of how he put aside his own work, often at great inconvenience, to serve the interests of an individual medical man or the profession generally. Nothing was too much trouble for him. When the interests of the profession were at stake, either in London or in a distant town, he would rush off to the meeting and report fully at the next local meeting. Dr. McIntosh, in presenting Dr. Barton with a handsome silver salver and a fitted dressing-case, spoke in felicitous terms of the great amount of work done by Dr. Barton for the profession.

ONODI COLLECTION OF NASAL ANATOMY.

THE Royal College of Surgeons of England have accepted the gift of this valuable collection from the Onodi Subscription Fund Committee. The specimens will be mounted and catalogued by the College, and when completed each subscriber will be presented with a catalogue.

The list of subscribers is as follows:

£52 10s.—Honorary Staff Central London Ear, Nose and Throat Hospital.
£26 5s.—Honorary Staff, Throat Hospital, Golden Square.
£20.—Sir William Milligan.
£10 10s.—Sir StClair Thomson, Sir James Dundas Grant.
£10.—Messrs. Mark Hovell, A. Logan Turner.
£5 5s.—Sir John Bland-Sutton, Sir F. Bell Longhurst, Messrs. W. M. Mollison, Norman Paterson, Somerville Hastings, W. Douglas Harmer, F. A. Rose, A. Brown Kelly, Tyrrell Grey, W. G. Howarth.
£5.—Messrs. D. R. Patterson, Thelwall Thomas, A. J. Hutchison, Herbert Tilley, H. Lambert Lack.
£3 3s.—Sir Charles Ballance, Sir Charles Ryall, Dr. William Hill, Messrs. Herbert J. Marriage, G. W. Wilkinson, J. F. O'Malley, A. L. Macleod, C. A. Parker, E. D. Davis, W. G. Spencer, W. Jobson Horne.
£3.—Messrs. E. A. Peters, Charles J. Heath.
£2 2s.—Sir William Arbuthnot Lane, Sir Frank Colyer, Sir Harold Stiles, Sir Anderson Critchett, Messrs. George Cathcart, W. S. Syme, Ranson Pickard, W. H. Dolamore, H. Watson Turner, Albert A. Gray, Ernest Clarke, E. Treacher Collins, C. Ernest West, Dr. James Taylor, Mr. T. Guthrie, Sir G. Sims Woodhead, Dr. George Morgan, Dr. John Eyre, Dr. P. Watson-Williams, Messrs. W. H. MacMullen, Philip Franklin, Robert P. Mathers, H. J. Waring.
£1 1s.—Mr. V. L. Sanzgiri, Dr. W. Ainslie Hollis, Messrs. William Appleyard, R. P. Rowlands, J. H. Badcock, Russell Barrett, Henry Peterkin, George E. Waugh, Wilfred Glegg, Sir D'Arcy Power, Messrs. H. O. Dickin, Henry Smurthwaite, Dr. Peter Macdonald.
£1.—Messrs. Thomas Rogers, William Rushton.
10s.—Mr. Andrew Ellis Wynter.
5s.—Mr. George Jones.

IN November 593 cases of plague occurred in Java, all of which were fatal, as compared with 637 in October.

THE Board of the Royal Salop Infirmary has adopted a resolution recording the irreparable loss sustained by the death of Mr. Arthur Jackson, who for nearly thirty years was honorary surgeon and subsequently honorary consulting surgeon to the Infirmary.

A SPECIAL post-graduate course, lasting two weeks and consisting of thirty lectures, will be held at Easter, commencing on March 21st, at the Medical Clinic, Hôtel-Dieu, Paris, on "Recent ideas on diseases of the liver (including diseases of the biliary passages and the pancreas)." The fee is 150 francs, and particulars may be had from the Secretary of the Faculty of Medicine, University of Paris. Further post-graduate courses are, it is announced, to be carried on later in the year: in July, on diseases of the digestive system, and in September a practical course on the application of laboratory methods to diagnosis.

Correspondence.

"MINUTE BODIES" IN EPIDEMIC ENCEPHALITIS.

SIR,—With reference to Dr. C. Da Fano's interesting and suggestive "Preliminary note on the histo-pathology of epidemic (lethargic) encephalitis" in the JOURNAL of January 29th, 1921, I write to say that within the last few weeks, while studying the pathological histology of a series of cases of encephalitis, I have observed structures which appear to be identical with the "minute bodies" described by him. They were first noticed in sections stained by the Nissl method, and have been found in each of three cases of the series examined by this method. The remainder of the cases have not yet been investigated. The bodies were seen in the nerve cells of the pons, optic thalamus, mid-brain, cortex, and also in the interstitial tissue. They appear to occur in comparatively few cells and their detection requires systematic search. Their presence is associated with considerable degenerative changes, and I cannot recall observing them in cells of normal appearance.

In the main the appearances found agree with those described by Dr. Da Fano, though I have not met with such large numbers in a nerve cell as shown in his Fig. 1. Until reading his article I had formed no opinion as to the significance of these bodies, though I had come to the conclusion that they were morphologically distinct from the pigmentary granules commonly found in the nerve cells in encephalitis.—I am, etc.,

A. F. BERNARD SHAW,
Pathological Department, College of Medicine, Newcastle-upon-Tyne.

January 30th.

WHAT IS A SYMPTOM?

SIR,—In his paper published in the JOURNAL of January 29th, Sir James Mackenzie discusses "The Relations of Symptoms to Disease."

All those who are following Sir James's valuable work—and they are many—will want to know what meaning he attaches to the term "symptom." I therefore venture to ask what precisely that meaning is.—I am, etc.,

HARRY CAMPBELL.

London, W., Jan. 29th.

THE PRODUCTION OF SYMPTOMS.

SIR,—As one who believes that Sir James Mackenzie, in enunciating, in the JOURNAL of January 29th, the law that the vast majority of the symptoms of disease are disturbances of normal reflexes, has done for medicine what John Dalton did for chemistry in 1808, I desire to draw attention to certain aspects of his theory in its relation to pulmonary tuberculosis. The symptoms of this disease are not only in harmony with Sir James Mackenzie's law, but also extend in some measure its detailed application. In the fourth group of diseases, represented by "a confused heap of symptoms in which it is not possible to obtain a suggestion as to their relation to a common cause," Sir James Mackenzie places—

"all chronic diseases, even though the ill health is definitely due to damaged organs which can be recognized by physical signs—as arterio-sclerosis, chronic heart disease, chronic kidney disease, and even consumption and cancer. The reason for including these is that they are probably secondary diseases, the original cause not being capable of recognition."

As regards pulmonary tuberculosis, I presume that this sentence refers to the symptoms of the disease, and implies that these symptoms cannot be explained in relation to the morbid changes in the structure of the lung. Even if it be so, I submit that tuberculosis should not be included in this group. Many years ago I learnt from Sir Robert Philip that pulmonary tuberculosis is not a local disease of the lung, but is a general toxaemia affecting all systems of the body, and due to successful infection by the tubercle bacillus; and I now suggest that the symptoms of this disease may be explained by the effects of toxaemia on all reflex arcs of the body. Further, I submit that in this instance at all events it is not possible to differentiate between a stimulus acting on the receptor (A), and an agent altering the receptivity of the nervous mechanism (B) and the effector (C) of the symptom.

These propositions are easily illustrated. A very early symptom of pulmonary tuberculosis may be uneasy sensa-

tions in the stomach during digestion, associated with hypersensitiveness of the gastric mucosa — that is, of receptor (A) due to toxaemia. Later on, tuberculous toxins produce an irritability of the vagus nerve, and an entire reflex arc is affected. Food irritates the hypersensitive stomach (A), and this excites the vagus (B), with the result that the ingestion of food is followed by a reflex secretion of mucus in the respiratory tract (C). After meals the patient has coughing, hawking, and retching.

This symptom is explained by the increased irritability of a reflex arc, every portion of which is affected. Most probably it is but the exaggeration of a normal reflex whereby the ingestion of food is followed by an increased flow of saliva. Apart from tuberculosis, I have noted that when this reflex is even slightly exaggerated the area over which it operates is extended, and that there is an increased flow of secretion in the upper respiratory tract, particularly in the nasopharynx, and even from the lacrymal glands. Although the reflex arc in other symptoms of tuberculosis may not be apparent at present, many true things have been discovered by analogy, and the study of Sir James Mackenzie's law will certainly lead to the recognition of many reflexes hitherto unobserved.—I am, etc.,

London, S.W., Jan. 29th. HALLIDAY SUTHERLAND.

TREATMENT OF THE PRE-OPERATIVE STAGE OF ENLARGED PROSTATE.

SIR,—I agree with Dr. MacMunn that there are cases with prostatic symptoms that do not require operation.

In the address to which he refers I did not set out to discuss all cases that might or might not require operation, and the only words which might convey this impression occur in a heading, "Indications for operation," that was slipped in after the typescript left my hands and was unnoticed by me in reading the proofs. The text below this, however, leaves no doubt that the only indications are those of operation as opposed to catheter life, and not the general question of indications for operation in enlarged prostate.

The theme that I developed, and that I hoped was clearly stated, was that all patients complaining of prostatic symptoms should be investigated, that the investigation should be thorough and should not be confined to the urinary tract, and that patients with enlarged prostate should not be allowed to drift into renal inefficiency from back pressure or urinary sepsis from catheterization.

I cannot see how Dr. MacMunn gets the impression that I wish to operate on all cases complaining of prostatic symptoms or on all cases where the prostate is at all enlarged provided they are fit to stand an operation. The majority of cases of enlarged prostate that I have observed have been steadily progressive in regard to the symptoms, or the ascertainable size of the prostate, or the effect on the urinary tract, or on all of these counts. There are cases in which the enlargement seems to stand still; and if this apparent arrest occurs at a period before the obstruction has produced residual urine, there is no harm, so far as the urinary tract is concerned, in waiting, provided the patient keeps under observation. But one remembers cases where the patient has received the assurance that the condition was stationary, and, in default of an increase or with only a small increase in the symptoms, has come up after some years for examination with a "silent" prostate, chronic distension of the bladder, and serious damage to the kidneys; or, on the other hand, the once simple enlargement now shows an area of hardness that leaves no doubt as to a malignant change.

I have asked for nothing more than that these possibilities be placed before the patient, and he should make his own decision. He has in any case the right to know that such eventualities may occur.

In regard to nocturnal frequency after the age of 50, I think if Dr. MacMunn will read this paragraph again, he will see that I recommend that such cases should be investigated, not that they should be operated on because they have this increased frequency.

I am sure Dr. MacMunn does investigate these cases, for he has evolved a theory to explain the symptom. I do not doubt that in his investigation he finds a good many cases which he would classify under some other heading than "waning of the vesical sphincter."—I am, etc.,

London, W., Jan. 25th. J. W. THOMSON WALKER.

SIR,—Mr. Thomson Walker's important contribution in the JOURNAL of January 15th emphasized the possibility of avoiding various special risks. Mr. MacMunn's letter in your issue of January 22nd very properly goes a stage further back, and raises the most important question of all, *What can be done to diminish the number of cases requiring operation?*

Do we know the cause of the enlargement? Certainly a large proportion of those cases coming to us for operation are adenomatous. Is there a gradual failure of balance of internal secretion as old age comes on? Is there any material evidence in favour of the use of orchitic extracts to combat senile prostatic enlargement? Can anything effective be done by bladder hygiene and the voluntary, thorough, regular emptying of the organ? Chronic inflammatory enlargement may respond to massage, but adenomatous hypertrophy can hardly be expected to do so.

What influence has diet? In Kashmir the Hindus, who are vegetarians, enjoy a remarkable immunity from enlarged prostate. In the Mohammedans, who are meat eaters, prostatic trouble is not rare. In advanced cases with persistent retention I have frequently operated, with the usual beneficial rejuvenating result. But how many successful cases are to be weighed in the balance against one death, whether from embolism or other cause? It is true that the results would be greatly improved if we operated before catheter life had begun. All surgeons of experience, however, know that many cases do recover after a period of catheterization and live in comfort to a good old age. Few would therefore advise routine operation after a first attack of retention.

Prostatectomy has won an honoured place in surgery, due in no small measure to the work of Sir Peter Freyer, Mr. Thomson Walker, and other distinguished surgeons. A still greater advance will be made when we know with more precision *how to arrest the enlargement* of the prostate before it produces serious results. The disease is all too common. Is it too much to hope that some of your readers may be able to contribute to our knowledge in this respect?—I am, etc.,

Bromley, Kent, January 30th. ERNEST F. NEVE.

THE PREVENTION OF VENEREAL DISEASE.

SIR,—The dispute which is being waged in these pages on the subject of prophylaxis in venereal disease has long ago lost the characteristics of a scientific discussion, and is rapidly acquiring those of a family quarrel. What is more distressing still is the fact that this quarrel has spread beyond the confines of the medical into the lay press, so that the noise and clamour of it are plainly heard by the man in the street. Small wonder that the latter has shrugged his shoulders and lost his confidence in those to whom he is entitled to look for leadership and advice.

Has not the time come for emphasizing points of agreement rather than those of dispute? Two societies exist for the purpose of combating venereal disease—the National Council for Combating Venereal Diseases and the Society for the Prevention of Venereal Disease. On their lists of membership appear names that command respect and consideration for the opinions that each society has advanced. No one who has seen the excellent work achieved by the National Council for Combating Venereal Diseases can consider it an effete body that has sacrificed every practical measure to a sentimental fetish. No one who has read the list of membership of the Society for the Prevention of Venereal Disease can suppose for one moment that such eminent men would deliberately support a policy that is calculated to undermine the moral welfare of the community. In spite of the noise and dust raised by various extremists, it is certain that there exists a considerable sphere of activity common to both societies.

It is only over the question of prophylaxis that the split has arisen. The Society for the Prevention of Venereal Disease is convinced that the packet system has been instrumental in materially reducing the incidence of venereal disease in the services, and believes that its adoption by the civil community would be equally productive of good. The National Council for Combating Venereal Diseases, on the other hand, is dissatisfied with the results of prophylaxis in the services, and does not in any case believe that the adoption of the packet would be productive of

good when applied to the civil community. Each of the societies has put forward statistics upon which the other has cast doubts, and each has arrived at conclusions which are endorsed by experienced authorities. Where does the truth lie? It is difficult, or impossible, at the moment to say. Statistics can be found to prove or disprove most of our prejudices, and our attitude towards the question of "packets for the people" must for the present be based on personal opinion rather than established fact. The centre of truth, like the centre of gravity, lies somewhere between the two extremes. It is possible that the National Council for Combating Venereal Diseases has underrated the importance of prophylaxis in the campaign against venereal disease. It is equally possible that the Society for the Prevention of Venereal Disease in its enthusiasm for a neglected remedy has tended to regard it as the "single measure that will cure our ills."

There is work for all in the campaign against venereal disease. The National Council for Combating Venereal Diseases is doing yeoman service in its educational campaign, and in its agitation for the provision of free and adequate treatment for venereal disease throughout the world. The Society for the Prevention of Venereal Disease is convinced of the success of prophylaxis in the army and believes that its extension to the civil population will be equally effective of good. A campaign in favour of packets is the logical outcome of these views.

Let each of the societies work along the line it has chosen, but let it be recognized that until further data are available it is upon personal opinion rather than upon verified fact that conclusions must rest.

Lastly, may I put forward a suggestion that has already been made? Is it asking too much that members of the two societies should arrange to meet? Surely it is better that differences of opinion should be amicably discussed in a meeting of medical men rather than be made the subject of a bitter and somewhat tedious correspondence in the press. I believe that if such a meeting could be arranged a vast amount of common ground would be found to exist between the two societies, and that a satisfactory working agreement could be arrived at on this thorny subject of prophylaxis.

Apologizing for trespassing on your valuable space, I am, etc.,

London, W.1, Jan. 26th. KENNETH M. WALKER.

SIR,—Mr. E. B. Turner is not backward in taking advantage of his position of reviewer of Sir Archdall Reid's book to deliver an attack upon those with whom he does not happen to agree. He emphasizes the time-worn fallacy that the sexual instinct can be suppressed by terrorism. He has such a poor opinion of that portion of his fellow countrymen whom he calls "the populace" that he thinks that if it is entrusted with the ripe knowledge of such a practical authority as Sir Archdall Reid, fornication will be more practised than ever. He ignores the fact that in spite of his own lectures venereal disease is still rampant, and he has nothing to suggest but to persevere in a policy which is a proved failure.

It is interesting to note that he admits that many people will be protected by prevention; but he is of opinion that knowledge of self-disinfection will increase promiscuous sexual indulgence. This cannot be proved. But the admission and the opinion disclose the frame of mind, which is the real centre of the opposition to the teachings of science. It is the frame of mind that would apparently prefer that the many who would be protected should be visited with venereal disease rather than face the possibility that a certain number of people might gratify the sexual instinct who might otherwise have abstained.

Your readers must be aware of the cleavage between the two schools of thought. The one school would deny knowledge to their fellow countrymen; the other would give them access to it. Mr. Turner seems to think that knowledge ought to be and can be concealed from "the populace" by a policy of suppression. Other of your correspondents would appear to think that science can be defeated by ridicule.

The Society for the Prevention of Venereal Disease stands for access to knowledge. This knowledge is already public property. It cannot be suppressed. It is the duty of the State to see that it is scientifically applied, and we believe that our fellow countrymen have enough intelligence and self-control to be entrusted with it.—I am, Sir, your obedient servant,

London, W., Jan. 31st. WILLOUGHBY DE BROKE.

*** In a further letter, written on behalf of the Executive Committee of the Society of which Lord Willoughby de Broke is president, Dr. H. Wansey Bayly wishes to point out that Mr. E. B. Turner's review of Sir Archdall Reid's book, printed in our last issue, "must not be taken as an impartial review by an unbiassed reviewer outside the sphere of the controversy." Where such a person is to be found we do not know. As many of our readers are well aware, Mr. Turner is the representative of the British Medical Association upon the National Council for Combating Venereal Diseases, and his personal position in the present controversy is made sufficiently plain in the course of his review.

SIR,—In Mr. Turner's review of Sir Archdall Reid's book, he says:

> Miss Ettie Rout, a member of the Grand Committee of the Society for the Prevention of Venereal Disease, crystallizes the policy of that society in the following words, quoted by the Archbishop of Canterbury in the debate in the House of Lords: "Every boy and girl in our parishes must be provided free with the outfit which will make them secure, and when you have done that all will be right—go with clean people and you will be clean."

Please permit me to explain that these words were never said or written by myself. They were misquoted in the first instance in the House of Lords by the Archbishop of Canterbury and repeated in Sir Archdall Reid's book, from which Mr. Turner has quoted between inverted commas.—I am, etc.,

London, W., Feb. 1st. ETTIE A. ROUT.

THE BRADFORD MUNICIPAL HOSPITAL.

SIR,—Dr. Slater finds fault with my term, "obsolete buildings." I am quite willing to amend it by substituting the phrase "a group of buildings unsuitable for the requirements of a general hospital." We can leave the old blocks out of the argument altogether, and inquire into the justification of my criticism when applied to the newer buildings. Dr. Slater speaks of the modern hospital buildings built sixteen years ago. He describes the wards as providing accommodation for 156 adults, and as "comparing favourably with any in the country." Nevertheless he has declined my challenge to him in the local press. I suggested that one of these wards should be measured by me, and if it provided anything near 1,500 cubic feet a bed and 125 square feet of floor space, I would forfeit £5 and apologize. I knew he would decline, because these wards were built for Poor Law purposes under the Poor Law Regulations. The cubic space per bed is roughly 1,050 feet, and the floor space about 85 square feet. No one with any practical knowledge would suggest that such an allowance is adequate for general hospital purposes.

Dr. Slater also states that "within the last four years three other pavilions have been erected and put into use, each accommodating 100 patients." We are led to believe that these are part of "St. Luke's, with its splendid wards and equipment." As a matter of fact, these three "pavilions" are nothing more than some temporary emergency structures of wood and brick which were put up for soldiers during the war. A hundred soldiers could be accommodated in one of these "pavilions" by putting a row down each side and a row up the middle. Does Dr. Slater really think these are hospital wards capable of accommodating 300 patients? I leave it to your readers to decide.

In conclusion, may I say that Dr. Slater totally misunderstands my feelings in the matter? Everyone knows that Bradford requires a good first-class hospital. The Royal Infirmary Board has already gone some way towards establishing one—in fact, some building operations have actually commenced upon the new site. The proposals of the Health Committee, however, will put such a burden on the rates that the new infirmary scheme must inevitably die of inanition. I should not greatly regret it, provided the Health Committee had a good substitute to offer in its place. They have nothing of the kind. The municipal hospital cannot be made into an institution worthy of the city merely by talking about "splendid wards comparable with any in the country."

When I spoke of co-operation in my first letter I had in mind a genuine combination of effort to complete a new infirmary as soon as possible under a sound policy in which voluntary and municipal support were combined. It could be done if only the various interested parties would determine to bury all antagonism and unite to give the city what it really wants.—I am, etc.,

J. BASIL HALL.

Bradford, Jan. 31st.

RISKS AFTER OPERATIONS ON TONSILS AND ADENOIDS IN OUTDOOR CLINICS.

SIR,—I have been interested in reading the recent correspondence on this subject, especially as several leading surgeons have confirmed the opinion which I have held for some time—that these operations should not be undertaken by hospital authorities unless they are prepared to treat the children as in-patients.

With reference to Dr. Watson-Williams's remark that "We have been waiting year after year for something to turn up" with regard to further hospital accommodation for these patients, I should like to draw his attention to the manner in which these requirements are met in Leicester to-day. Two years ago I pointed out to the City of Leicester Education Committee that children suffering from enlarged tonsils and adenoids could be much more safely and effectively treated if they were kept in hospital for at least twenty-four hours after the operation than by discharging them on the same day, as was being done at that time. Since further accommodation at the hospital where these cases were being treated could not be entertained, I recommended that the education authority should establish a central school clinic, including a suitable operating theatre, and a ward containing twelve beds for the specific purpose of treating these defects. With the consent of the Ministry of Health this recommendation has now become an accomplished fact.

Previously these cases were treated at a local hospital, the arrangements being that the school surgeon should have the use of a small operating theatre three mornings each week, and that patients should be provided with beds for the day, under the supervision of a school nurse. The children were usually discharged in the evening, but in very exceptional cases a child might be kept in for the night at an additional charge. The following day, and on subsequent days if necessary, the school nurse visited the patient and noted if there was any rise in temperature or other symptoms to be reported to the surgeon. Over three thousand children have been treated in this way during the last few years. Although no serious complications have arisen, it is obvious that sending children so soon after the operation to homes that are often dirty and overcrowded, and where there is no skilled nursing, must be prejudicial to the rapid recovery of the patients.

Under our present scheme the children are kept in bed for at least twenty-four hours after the operation, and, if it is thought advisable, they can be kept longer.

From the inception of the school clinics in Leicester it has been the practice to refuse treatment entirely to any patient whose relatives could afford to pay an ordinary medical fee, whilst those who could pay a small fee have been charged in proportion to their income, and only those who were unable to pay anything have received free treatment. The following details showing the steps that must be taken to obtain treatment may be of interest:

1. The school medical officer must notify the parent that the defect exists.
2. The parent must sign a printed application form for treatment at the school clinic.
3. An investigator visits the home and records the number of persons in the family, the number of persons in work, and the addresses of their employers.
4. The amount of wages earned by each worker in the previous three months is obtained direct from the employer.
5. By means of a scale sanctioned by the Medical Service Committee, it is decided whether the case is to be refused, to be treated at a price according to income, or to receive free treatment.
6. If it is decided that the patient is to be treated, an appointment is made for a consultation with the surgeon, who determines if an operation is necessary.
7. A further appointment is made for the operation, and the parents are instructed how to treat the patient before and after the operation, by means of a printed leaflet.
8. The operation is performed, and the child remains in hospital for twenty-four hours.
9. The school nurse visits the patient the day after he has returned home.
10. Ten days later the patient is seen by the surgeon, who gives instructions with regard to breathing exercises, etc.

—I am, etc.,

ALLAN WARNER,
School Medical Officer.

Leicester, Jan. 25th.

SIR,—It is strange that in all this discussion on the risks of these operations, whether on the table or for lack of after-care, no one has suggested an alternative. There is in many cases such an alternative: I well remember demonstrating a complete cure by medicinal treatment in a case which had been taken to a consultant, "for an independent opinion" behind my back. He wrote to me to ask me to arrange for (the third) operation for removal. But with medicine they completely disappeared, and have given no sign for seven years.

In those cases which come on acutely—as, for example, after scarlet fever—or, at any rate, grow rapidly and exuberantly, it is my experience that iodine, either as tincture of iodine or as iodide, is infallible. It cures. Of the chronic cases, I find in the majority that nose breathing, with a little training as accompaniment, is generally rapidly restored by that drug. So, too, with the hearing. I have at this moment a child under observation with pronounced adenoids, and—so far—one operation, who has in a fortnight ceased to snore, and almost completely lost a deafness which has lasted the greater part of a year.

The effect is so striking that I have come to believe it wrong to subject a child to operation until it has had a fair trial of treatment with iodine in some form. If operation turns out to be necessary after all, it will be found to be much easier, more effectual and less bloody, by reason of the preliminary treatment.

For some reason I do not find enlargements of the tonsils to disappear so satisfactorily as the adenoids. But the tonsils nearly always shrink in size; they nearly always alter in texture; and, even if they have not been reduced to normal dimensions, the child loses the excessive sensitiveness to infective processes which is the worst feature of chronic tonsillitis. And, when necessary, the operation is much easier and much less bloody. The dosage is, of course, in proportion to age. I generally begin with ♏ j of tr. iodi, or gr. ij of sodium iodide, well diluted, thrice daily, and gradually increase the dose where necessary.—I am, etc.,

B. G. M. BASKETT.

Rayleigh, Essex, Jan. 30th.

SIR,—I write to support Mr. Fry in the views he holds with regard to the operation for the removal of tonsils and adenoids. For upwards of twenty years I operated upon these cases in the out-patient department of the Bedford County Hospital; I never sent a case into hospital on account of haemorrhage or sepsis during this period, nor has any patient developed complications. Experience is the final court of appeal.—I am, etc.,

S. J. ROSS.

Bedford, Jan. 30th.

HEMICOLECTOMY.

SIR,—In Mr. Sheen's article "On the end-results of colectomies for intestinal stasis," in the JOURNAL of January 22nd, p. 116, he asks, "Is there nothing besides the belt and paraffin but complete colectomy?" I would answer, "Among other things, hemicolectomy." I have done this operation (as described in the *British Journal of Surgery* for 1915) just a dozen times, and it seems to me that the risk is little, if any, more than that of the colopexy devised by Mr. Waugh, and in some cases it is a more suitable operation. All my patients recovered quickly without any complication; the only case in which there was not complete primary union was one in which cholecystostomy was done at the same time. One point in which hemicolectomy differs very much from complete colectomy is that the small bowel is not exposed in the former operation; the last few inches of the ileum are all that need be seen. There is therefore little risk of troublesome adhesions.—I am, etc.,

R. D. MOTHERSOLE.

Bolton, Jan. 27th.

GLANDULAR AND PULMONARY TUBERCULOSIS.

SIR,—Dr. W. Williams, in his memorandum on the above named subject in your issue of January 29th, has touched on a matter of great interest and some importance.

Stanley Griffiths has concluded that there is some relation between attenuation of the virulence of the tubercle bacillus and the proximity of the lesion to the surface of the body, but I think that the actual suppuration of the gland has a great deal to do with the immunity of the subject against pulmonary tuberculosis. The tonsils are regarded as one of the first lines of defence against the tubercle bacillus, and are commonly the site of tuberculous lesions, but in a large series of bacteriologically verified cases of pulmonary tuberculosis I have noticed that there is practically never any enlargement of these glands. In the few cases in which some enlargement has been noticeable it has only been slight. If other tuberculosis and school medical officers have had similar experiences they would form a strong argument against the indiscriminate removal of the tonsils.—I am, etc.,

W. H. DICKINSON,
Newcastle-upon-Tyne, Jan. 31st. Tuberculosis Medical Officer.

Universities and Colleges.

UNIVERSITY OF OXFORD.

Certificate in Practical Ophthalmology.

THE Board of the Faculty of Medicine gives notice that in and after Michaelmas term, 1921, candidates for the Final B.M. Examination will be required to submit a certificate of attendance at a course of practical instruction in ophthalmology, which included not less than twenty meetings during a period of three months, at an ophthalmic clinic recognized by the Board.

A decree was passed in Congregation on January 25th authorizing the continuance of the stipend of a woman demonstrator in the Department of Human Anatomy.

UNIVERSITY OF CAMBRIDGE.

The M.Ch. Degree.—On January 27th Mr. G. E. Wherry, on behalf of the Special Board for Medicine, brought forward a report containing proposals for raising the dignity and status of Masters of Surgery, of whom there are now only 27. He recalled the fact that until the late war this coveted degree was known by the distinctive initials "M.C.," which were then changed to "M.Ch.," in order to avoid confusion with recipients of the Military Cross. It was felt that some compensation was due to these distinguished surgeons and teachers, and the suggestion had been made that a Doctorate of Surgery should be set up. The Regius Professor of Physic, Sir Clifford Allbutt, emphasized the searching nature of the examination for the M.Ch. degree, remarking that it was exceeded in severity by the examination for no other university degree. Pending the establishment of a Doctorate, he felt that a genuine grievance might be met by revising the order of precedence in the interests of holders of the M.Ch. degree and by granting them special academic dress. At present Masters of Surgery rank in the order of presentation for degrees after Doctors in all faculties, and after Bachelors of Divinity, Masters of Arts, and Masters of Law; they wear the gown and hood of M.A.'s.

Readership in Experimental Psychology.—A Congregation held on January 28th approved the recommendation of the General Board of Studies that Dr. C. S. Myers, F.R.S., who for the past fourteen years has been University Lecturer in Experimental Psychology, should be appointed University Reader in that subject for a period of five years. With this appointment the University Lectureship lapses.

The following medical degrees have been conferred:

M.B., B.CH.—P. Lazarus-Barlow, E. B. Verney.
M.B.—E. P. Hicks.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

An ordinary Comitia of the Royal College of Physicians was held on January 27th, with the President, Sir Norman Moore, in the chair.

The following were admitted to the membership of the College:

John Maurice Hardman Campbell, M.B.Oxon., James Henry Dible, M.B.Glasg., Maurice Gilbert Hannay, M.D.Brux., L.R.C.P., Bernard Hart, M.D.Lond., L.R.C.P., Frederick Greig Hobson, M.B.Oxon., L.R.C.P., Charlotte Alice King, M.D.Lond., Douglas McAlpine, M.B.Glas., William Edward Robinson, M.D.Oxon., L.R.C.P., Matthew Sidney Thomson, M.B.Camb., L.R.C.P., William Wrangham, M.D.Lond., L.R.C.P.

Jointly with the Royal College of Surgeons, diplomas in (*a*) public health, (*b*) tropical medicine and hygiene, (*c*) psychological medicine, (*d*) ophthalmic medicine and surgery were granted to the successful candidates.

Dr. A. P. Beddard, Dr. A. J. Hall, Dr. J. W. Russell, Dr. F. Gowland Hopkins, were elected, on the nomination of the Council, councillors to take the place of Dr. Hamer, Dr. Voelcker, Sir Percival Horton-Smith-Hartley, and Dr. Caiger, who retired by rotation.

The President announced that he had appointed Dr. Herbert Spencer to deliver the Harveian Oration and Dr. Michael Grabham the Bradshaw Lecture in 1921, and that the Council has appointed Dr. Major Greenwood to deliver the Milroy Lectures in 1922.

A report dated January 4th, 1921, from Sir Humphry Rolleston and Dr. R. O. Moon, representatives of the College at the celebration of the Centenary of the Académie de Médecine of Paris, held December 20th–22nd, 1920, was received. A medal presented to Sir Humphry Rolleston by the Académie de Médecine was offered by him to the College. The gift was accepted, and the thanks of the College voted to him.

A report from the Representative of the College on the General Medical Council concerning the session held in November, 1920, was received and entered on the minutes.

After some formal College business the President dissolved the Comitia.

Diplomas.

Diplomas in the subjects indicated were granted in conjunction with the Royal College of Surgeons of England to the following candidates:

PUBLIC HEALTH.—P. F. Alderson, Madeleine S. Baker, T. B. Batchelor, W. W. Boyce, J. W. Caton, H. W. Catto, K. Comyn, T. A. Fuller, K. A. Gandhi, D. H. Geffen, E. St.G. S. Goodwin, D. N. Gore, A. J. B. Griffin, P. H. Henderson, Eileen M. Hewitt, E. T. Holden, P. G. Horsburgh, T. S. Keith, N. S. Kotwall, T. A. Lawder, J. T. Macnab, A. N. R. McNeill, C. T. Maitland, Mary Martin, J. S. Ranson, H. J. Simson, O. C. S. Tandy, A. Viney, A. S. Wakely, A. Woollcombe.

TROPICAL MEDICINE AND HYGIENE.—G. V. Allen, J. Anderson, S. C. Basu, C. J. Caddick, W. B. A. K. Cullen, A. Dasgupta, A. A. Denham, A. M. El-Kirdany, R. E. Flowerdew, C. H. Heppenstall, L. C. D. Hermitte, F. V. Jacques, Z. Khaled, P. T. Liang, R. H. Liscombe, A. R. Mehta, A. S. Paranjpé, H. B. Parker, A. H. Patel, Evelyn B. Salter, R. Silcock, S. Somasundram, W. R. Taylor, A. S. Westmorland, H. G. Wiltshire.

OPHTHALMIC MEDICINE AND SURGERY.—J. R. Anderson, R. S. Candlish, K. M. Labiebe, W. O. Lodge, B. H. Pesikaka, S. A. Rahim, G. Zachariah.

PSYCHOLOGICAL MEDICINE.—M. Dia, E. D. T. Hayes, O. S. Martin, H. W. Parnis.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE Hunterian Oration will be delivered in the theatre of the College by Sir Charters J. Symonds, K.B.E., C.B., on Monday, February 14th, at 4 p.m.

The Arris and Gale Lecture on the cause and prevention of myopia will be delivered on Wednesday, February 16th, at 5 p.m., by Dr. F. W. Edridge-Green, C.B.E., F.R.C.S.

A Hunterian Lecture on a research into the pathology and etiology of loose bodies composed of cartilage or of cartilage and bone occurring in joints will be delivered on Friday, February 11th, at 5 p.m., by Mr. A. G. Timbrell Fisher, M.C., M.B., F.R.C.S.

Two Hunterian Lectures on the surgery of the peripheral nerve injuries of warfare will be delivered by Mr. Harry Platt, M.S., F.R.C.S., on Monday, February 7th, and on Wednesday, February 9th, at 5 p.m.

CONJOINT BOARD IN SCOTLAND.

THE following candidates have been approved at the examination indicated:

FINAL EXAMINATION.—*Medicine and Surgery:* D. J. H. Ferdinando. *Medicine and Midwifery:* Pauline Figdor, R. E. Hopton, J. B. O'Neill. *Medicine:* H. Brown, L. H. Peries, G. ap V. Jones. *Surgery:* J. Murray. *Midwifery:* J. S. A. Rogers, J. J. M'Donald. *Medical Jurisprudence and Public Health:* W. A. M'K. Gibson, J. H. Dobbin, C. T. Williams, Marguerite M. I. Swanson, P. J. D. Dyce, J. Readdie, R. E. O'Keeffe, P. E. Malloch, Marjory J. A. Ogilvie, A. G. Thom, A. R. Lambie, T. Kelarkan, D. R. Cilliers, J. A. H. Dykes, E. J. Sykes, T. F. Kelly.

The following candidates were admitted L.R.C.P.E., L.R.C.S.E., L.R.F.P. and S.G.:

R. A. Cooper, F. J. D. Cass, G. J. D. Hammond, G. J. Murray, J. Shulman, J. H. Wilson, A. Cuthberston, M. H. Carleton, H. G. Fitz-Maurice, A. F. Caddell, P. Parthasarathy, W. G. Carew, J. Black, A. Tirumlaiya, P. M. Fernando, J. B. van Cuylenburg.

Obituary.

WILLIAM L. ROBERTSON, M.C., M.B., CH.B., F.R.C.S.ED.,

Surgeon, Dundee Royal Infirmary.

WE much regret to announce that Mr. William L. Robertson, M.C., of Dundee, died on January 24th in his 39th year, from septic poisoning due to a needle prick, during the performance of an operation at the Royal Infirmary.

After graduating M.A. at St. Andrews University he proceeded to Edinburgh University, where he took the degrees of M.B., Ch.B. in 1905; he obtained the diploma of F.R.C.S.Edin. in 1907. After serving as resident surgeon at the Edinburgh Royal Infirmary, the Chalmers Hospital, and the Hospital for Sick Children, Edinburgh, he became honorary assistant surgeon at the Dundee Royal Infirmary, and subsequently clinical tutor at University College, Dundee. Mr. Robertson, who was a captain in the 3rd Highland Field Ambulance, went to France with that unit in 1914, and later received a staff appointment in the 51st Division. He was twice mentioned in dispatches, and was awarded the Military Cross. On being transferred to the Italian front he was appointed to No. 24 Clearing Station, and later given command of No. 70 Field Ambulance; he terminated his work on that section

as A.D.M.S. At the conclusion of the war he was appointed a surgeon at the Orthopaedic Hospital at Bangour, and on returning to practice at Dundee was appointed full surgeon to the Infirmary and to the orthopaedic annexe. In December last he was appointed lecturer in clinical surgery at St. Andrews University, and succeeded Mr. D. M. Greig as surgeon to the Victoria Hospital.

Mr. Robertson's death, after only three days' illness, came as a great shock to his many friends and to the profession in the East of Scotland. He was a man of outstanding ability, absolute honesty and of a most lovable disposition. Ever ready to help, he combined a convincing manner with a most modest estimate of himself. The loss sustained by the medical profession in Dundee cannot at present be realized.

The Services.

HONOURS.

FOREIGN DECORATIONS.

THE King of the Belgians has conferred the Croix Civique, 1st Class, upon the following medical officers for distinguished services rendered during the course of the campaign: Major (temporary Lieut.-Colonel) Philip J. Marett, R.A.M.C., Captain Robert Wilkie Smith, R.A.M.C.(T.F.), and Captain Frederick Septimus Walker, R.A.M.C.(T.F.).

The name of Captain J. A. O'Driscoll, R.A.M.C., has been brought to the notice of the Secretary of State for War for valuable and distinguished services rendered with the British Military Mission in Siberia.

DEATHS IN THE SERVICES.

COLONEL OCTAVIUS TODD, C.B.E., A.M.S. (retired), died at Southsea on October 18th, 1920, aged 68. He was born in India, educated at Aberdeen, where he graduated M.B. and C.M. in 1878, and entered the army as surgeon on March 6th, 1880, attaining the rank of lieutenant-colonel after twenty years' service, and that of colonel on April 4th, 1906; he retired on July 1st, 1909. He served in the South African war, 1900-1902, and held the temporary rank of colonel while serving as P.M.O. of a division of the field force from May 2nd, 1900. He took part in the relief of Ladysmith, the actions at Vaal Krantz, Tugela Heights, and Pieter's Hill; operations in Natal, including action at Laing's Nek; and operations in the Transvaal; was four times mentioned in dispatches, in Sir Redvers Buller's dispatches of June 19th and November 9th, 1900, and in the *London Gazette* of February 8th, 1901, and July 29th, 1902; and received the Queen's medical with five clasps and the King's medal with two clasps. During the recent war of 1914-18 he was re-employed in England, and received the C.B.E. on June 3rd, 1919.

Medical News.

THE first meeting of the newly formed Brooklyn Cardiological Society was held recently under the chairmanship of the president, Dr. William J. Cruikshank. Among the honorary members are Dr. Thomas Lewis, F.R.S., London, Sir James Mackenzie, F.R.S., Aberdeen, and Dr. W. T. Ritchie, Edinburgh.

A SPECIAL course of lectures on fevers, their clinical and epidemic features, and measures for their prevention and treatment, will be given at Charing Cross Hospital Medical School by Dr. William Hunter, C.B., on Thursdays, February 10th, 17th, and 24th and March 3rd and 10th at 4.30 p.m. The lectures are free to medical practitioners and students of medicine.

DR. F. E. WYNNE, M.O.H. for Wigan, has been appointed M.O.H. for Sheffield, in succession to Dr. Scurfield. He has devoted himself to public health work, and during the war was Divisional Sanitary Officer of the Egyptian Expeditionary Force. For a number of years he was honorary secretary and representative of the Leigh Division of the British Medical Association, and was intimately connected with the fine and successful fight the local profession put up for recognition in the matter of the staffing and working of the local hospital.

THE anniversary dinner of the Medical Society of London will be held at the Wharncliffe Rooms, Hotel Great Central, on Tuesday, March 8th, at 7.30 o'clock.

A LECTURE on "The innervation of striped muscle fibres and Langley's receptive substance" will be given at the rooms of the Royal Society of Medicine (1, Wimpole Street, W.1) by Professor J. Boeke, of Utrecht, at 5 p.m. on Wednesday, February 16th, with Professor Bayliss in the chair. Four other Dutch lecturers will also give one lecture each in English; particulars will be announced later. Admission free, without ticket.

WE are asked to draw the attention of all medical practitioners and of hospital authorities to a woman calling herself Margaret Crawford, M.B., Ch.B.Leeds (or Margaret de Lancy Williams), whose arrest is sought on a warrant by the metropolitan police for alleged offences against the Medical Acts, 1858. It is possible that this woman will seek admission to some hospital or infirmary for the purpose of obtaining instruction in midwifery; and it is requested that any information concerning her should be communicated at once to the local police.

THE Hunterian Society annual oration will be delivered by Dr. H. H. Bashford, on "The ideal element in medicine," on Wednesday, February 16th, at 9 p.m., at the Sion College, Embankment, E.C. All members of the medical profession are invited to attend.

SIR NAPIER BURNETT, K.B.E., M.D., has been appointed a Knight of Grace in the Order of St. John of Jerusalem.

A SPECIAL course in ophthalmology, for graduates and advanced students, is being arranged to be carried on daily during May and June at the Hôtel-Dieu Hospital, Paris, under the direction of Professor F. de Lapersonne, assisted by a staff of specialists in different branches. The course will include clinical examinations, practical (operative) work, and laboratory work, and a special certificate will be issued by the Faculty of Medicine at the end of the course. The number taking the course will be limited to forty, the fee is 150 francs (approximately £3 at present), and intending members should write as soon as possible to the Secretary of the Faculty of Medicine, Paris.

A GENERAL meeting of the Medical Officers of Schools Association will be held at 11, Chandos Street, Cavendish Square, W.1, on Tuesday, February 15th, at 4.45 p.m., when a paper will be read by Dr. E. H. T. Nash on "School punishments."

DR. WILLIAM BENTLEY PURCHASE, M.C., has been appointed deputy coroner for the Eastern District of London.

THE second annual 19th Casualty Clearing Station dinner will be held on February 19th at the Refectory Restaurant, Golders Green, London, N.W. Those wishing to be present are asked to communicate with the Rev. E. C. Doddvell, 6, Alexandra House, Regent's Park Road, Finchley, N.3. The price of tickets is 15s.

THE second International Congress of Eugenics will be held in New York City from September 22nd to 28th. The Honorary President is Dr. Alexander Graham Bell, and the President Mr. H. F. Osborn. The Secretary-General is Dr. C. C. Little, American Museum of Natural History, New York City.

As a result of the Peace Commemoration Appeal, St. Bartholomew's Hospital has received upwards of £132,000. The Governors have passed a resolution of thanks to Mr. A. F. Shepherd, who originated and organized the appeal.

A MEETING of members of the medical profession to discuss the advance of medical education in China will be held on Monday, February 21st, at 5.30 p.m., in the Barnes Hall, Royal Society of Medicine, 1, Wimpole Street, W.1. Among those who will be present are the Right Hon. Sir Clifford Allbutt, Sir Donald MacAlister, Sir Alfred Pearce Gould, and Sir Francis Champneys.

AT the meeting of the Royal Anthropological Institute, at 50, Great Russell Street, W.C.1, on Tuesday, February 8th, at 8.15 p.m., a lecture (with lantern illustrations) on tailed men will be given by Professor Arthur Keith, F.R.S.

DR. C. CHAPMAN GIBBES, on his appointment as consulting physician to the National Hospital for Diseases of the Heart, after twenty-three years' service as physician, has been presented by his colleagues on the staff with a silver salver, in token of their appreciation of his work. The out-patients also presented him with a silver salver.

THE municipality of Bucharest has changed the name of one of its streets in honour of Dr. J. Clunet, the French physician, who for several years took an active part in combating epidemic disease in Rumania.

PROFESSOR LUIGI CONCETTI, editor of the *Rivista di Clinica Pediatrica*, and a well known authority on children's diseases, has recently died. His successor in the chair of children's diseases in the University of Rome is Dr. T. Lozzatti.

THE *American Journal of Obstetrics and Diseases of Children*, which discontinued publication in February, 1920, has been succeeded by the *American Journal of Obstetrics and Gynaecology*, the first number of which appeared in November.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Mediocra, Westrand, London;* telephone, 2630, Gerrard.

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin;* telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh;* telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"DOUBTFUL" and his wife have been separately assessed for the income from their respective medical posts. "Doubtful" has had the married allowance of £225 and his wife the £45 special allowance for the earned income of a married woman. Is this, he asks, correct?

*** As regards the total allowance, yes; the right of separate assessment does not carry with it a right to any additional allowance. It would, however, have been more in accordance with strict law if the total allowance of (£225 + £45 =) £270 had been divided between husband and wife in proportion to their respective total assessable incomes—and the same division should apply to the £225, taxable at 3s. in the £.

"DILATED PUPILS."

DR. ERNEST KINGSCOTE (London) writes: In reply to "C. F. R.'s" letter in your last issue, I saw a patient, a girl, aged 22, who suffered from dilated pupils with severe headache after reading with suitable glasses. There was no ascertainable cause. The untoward symptoms were relieved by electro-vibration on the centre of the forehead—three times a day for five minutes. The instrument used was a "pulsator." The application gave almost immediate relief to the headache. I can throw no light on the phenomena, except that vibration tends to relieve deep-seated congestions.

LETTERS, NOTES, ETC.

THE TRUE COLOUR OF TISSUES.

DR. HORATIO MATTHEWS (London, W.1) writes: The difficulty of estimating the true colours of tissues—for example, retina, etc.—which can only be examined by artificial light can be overcome by wearing plano lenses appropriately tinted to convert the spectral quality of the light used to daylight values on the principle of the Sheringham reflector. But the nature of the light used—that is, electrical, gas, paraffin, etc., —should be specified in ordering the lens.

EARLY DIAGNOSIS OF PHTHISIS.

DR. T. A. G. HUDSON (Oldbury, Birmingham) writes: One or two further observations on the interesting article by Dr. Rivers on "The drooping shoulder sign of phthisis" (BRITISH MEDICAL JOURNAL, January 22nd, p. 120) may be of interest. Although Dr. Rivers mentions Krönig in reference to his particular article with regard to the relationship of the scapula to its fellow of the opposite side and to the spine, he has not mentioned the fact that what is probably the earliest sign of phthisis is a diminution in the area of resonance of the isthmus of Krönig, commonly at the right apex. The area of normal resonance is equal on both sides and extends from 2½ to 3 in., and any inequality in this area would point to that apex being affected even before any other signs manifest themselves. To elicit this information it is best to percuss from behind the patient, and to use a flesh pencil so as to compare accurately both sides.

HYPERIDROSIS.

DR. WILTON H. ROBINSON (Pittsburgh, U.S.A.) writes in answer to the request from "Beaten" (November 27th, 1920) for a remedy for hyperidrosis: There is a remedy that I first saw mentioned in one of the English journals some years ago that has never failed in the cases in which I have used it. It was given at that time for bromidrosis, but seems to be equally effective in the first condition. It consists of equal parts of lead plaster and linseed oil. It is applied as a plaster under a bandage, and allowed to remain on about forty-eight hours.

PROPERTY IN A DEAD BODY.

EVERY now and then somebody is surprised to discover that a testator cannot dispose of his own body; he cannot, for instance, leave it for dissection. The bequest is void, as there is no property in a dead body. The executors have a right to the possession of the body, and their duty is to bury it. Nevertheless, the Anatomy Act, 1832, does something towards enabling a man's wishes to be carried out. If a person, either in writing during his life or in the presence of two witnesses during the illness from which he dies, desires that his body shall be anatomically examined, the person having lawful possession of the body must cause the examination to be made, unless the husband or wife or nearest known relative requires interment without such examination. After such examination the body must be interred, and although interment must generally take place within six weeks of the time when the body was received for examination, this period may be extended by the Home Secretary. One legal writer suggests that the popular prejudice against dissection may be due to the fact that it has been associated by statute with felony and murder. In 1540 permission was given to the masters or governors of the mystery and commonalty of Barbers and Surgeons of London "to take, annually, four persons put to death for felony, for anatomies, and to make incision of the same dead bodies, or otherwise to order the same, after their discretions, at their pleasure for their further insight and better knowledge, instruction, insight, learning and experience in the science or faculty of surgery." In 1565 Queen Elizabeth granted to the College of Physicians the bodies of four felons executed in Middlesex "that the president, or other persons appointed by the College, might, observing all decent respect for human flesh, dissect the same." In 1663, the number of bodies so granted was increased to six by Charles II. In 1752 it was enacted that the bodies of murderers executed in London or Middlesex should be immediately sent to the hall of the Surgeons' Company, to be dissected and anatomized, and the attempt to rescue any such body was made a felony.

THE ANTIQUITY OF SYPHILIS.

ETIENNE (*La Chronique Méd.*, November 1st, 1920) supports by quotations from Suetonius the contention that syphilis occurred in Europe before the Christian era. The author has convinced himself that Augustus Octavianus Caesar (first Roman Emperor, born 63 B.C.) suffered from hereditary syphilis. The evidence advanced will scarcely appear convincing to the unbiassed critic; it consists in the early death of the father of Augustus Caesar, in the record that his mother suffered from a cutaneous lesion of serpentine form, and in the statement that Augustus himself, who had small, unequal, widely separated teeth, pigmentation of the skin, cutaneous eruptive lesions, weakness of the left hip, thigh, and leg, and paresis of the right index finger, suffered periodically from attacks of pulmonary congestion, followed by psychic disturbances. Augustus Caesar, it may be remarked, died at the age of 77 or thereabouts.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 32, 33, 36, 37, and 38 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 34 and 35.

THE following appointments of certifying factory surgeons are vacant: Horbury (York, West Riding), Penmaenmawr (Carnarvon), Portree (Inverness).

THE Dunlop 1921 Calendar, cleverly produced in oil facsimile by Raphael Tuck and Sons, Ltd., in conjunction with the Dunlop Company's Advertising Department, depicts a night scene in Piccadilly Circus. We understand that the accompanying date pad has been printed in almost every civilized language.

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